

2018 - 2019 Credit Catalog



Allentown | Jim Thorpe | Schnecksville | Tamaqua | LVI Airport
Baum School of Art | Online



Lehigh Carbon
COMMUNITY COLLEGE

2018-2019 Academic Calendar

Summer 2018

Summer Session – First 5-Week Option

May 21	Monday	Classes Begin – Full Term and Online
May 22	Tuesday	Last Day for Course Change or Late Registration
May 28	Monday	College Closed
June 1	Friday	Last Day to file an Application for August Graduation (No August graduation ceremony will be held)
June 2	Saturday	Last Day to Withdraw with an Automatic “W”
June 13	Wednesday	Last Day for Class Withdrawal “W” or “Y” Assigned
June 21	Thursday	Classes end for TR classes
June 25	Monday	Classes end for MW and MTWR classes
June 26	Tuesday	Final Examinations for TR classes
June 27	Wednesday	Final Examinations for MW and MTWR classes
June 29	Friday	Grades Due by Faculty

Summer Session – 10-Week Option

May 21	Monday	Classes Begin – Full Term and Online
May 25	Friday	Last Day for Course Change or Late Registration
May 28	Monday	College Closed
June 1	Friday	Last Day to file an Application for August Graduation (No August graduation ceremony will be held)
June 13	Wednesday	Last Day to Withdraw with an Automatic “W”
July 4	Wednesday	College Closed – No Daytime or Evening Classes
July 2-6	Mon.-Fri.	No Daytime or Evening Classes
July 14	Saturday	Last Day for Class Withdrawal “W” or “Y” Assigned
August 2	Thursday	Classes end for TR classes
August 6	Monday	Classes end for MW and MTWR classes
August 7	Tuesday	Final Examinations for TR classes
August 8	Wednesday	Final Examinations for MW and MTWR classes
August 10	Friday	Grades Due by Faculty
August 21	Tuesday	Summer Graduate Degrees Awarded (No Ceremony)

Summer Session – 2nd 5-Week Option

July 9	Monday	Classes Begin – Full Term and Online
July 10	Tuesday	Last Day for Course Change or Late Registration
July 20	Friday	Last Day to Withdraw with an Automatic “W”
July 31	Tuesday	Last Day for Class Withdrawal “W” or “Y” Assigned
August 8	Wednesday	Classes end for MW classes
August 9	Thursday	Classes end for TR and MTWR classes
August 13	Monday	Final Examinations for MW and MTWR classes
August 14	Tuesday	Final Examinations for TR classes
August 16	Thursday	Grades Due by Faculty

Fall 2018

Aug. 21-24	Tues.-Fri.	Faculty Convocation
Aug. 25	Saturday	Classes Begin – Full Term and Online
Aug. 31	Friday	Last Day for Drop/Add or Late Registration: Full Term
Sept. 1-3	Sat.-Mon.	College Closed
Oct. 1	Monday	Last Day to File an Application for December Graduation
Oct. 9	Tuesday	Collegewide Development Day – No Daytime or Evening Classes, Administrative Offices will remain open
Oct. 23	Tuesday	Progress Report Due 8:00 PM by Faculty
Oct. 30	Tuesday	Last Day to Make Up “I” Grade from Spring & Summer 2018 Semesters
Nov. 6	Tuesday	Last Day to Withdraw with an Automatic “W”: Full Term
Nov. 21	Wednesday	No Daytime or Evening Classes – Administrative Offices will remain open
Nov. 22-25	Thurs.-Sun.	College Closed
Dec. 8	Saturday	Classes End
Dec. 10-15	Mon.-Sat.	Final Examinations
Dec. 17	Monday	Final Grades Due by Faculty 10:00 AM
Dec. 19	Wednesday	Fall Graduate Degrees Awarded (No Ceremony)
Dec. 22-Jan. 1	Sat.-Tues.	College Closed*
Dec. 27	Thursday	*Administrative Offices Open on a Limited Basis 9:00 AM – 3:00 PM Main Campus, Morgan and Donley Only
Jan. 2	Wednesday	Administrative Offices Reopen

Winter 2018–2019

Dec. 16.....	Sunday.....	Winter Session Online Classes Begin
Jan. 16	Wednesday	Winter Session Online Classes End

Spring 2019

Dec. 22–Jan. 1	Sat.-Tues.....	College Closed*
December 27	Thursday	*Administrative Offices Open on a Limited Basis (9:00 AM – 3:00 PM @ Main Campus, Morgan and Donley Only)
January 2	Wednesday	Administrative Offices Reopen
January 17	Thursday	Faculty Development Day
January 18	Friday	Classes Begin – Full Term and Online
January 24	Thursday	Last Day for Course Change or Late Registration - Full Term
February 1	Friday	Last Day to File an Application for May Graduation
March 11–16	Mon.-Sat.	Spring Break – No Daytime, Evening or Saturday Classes
March 21	Thurs.....	Progress Report Due 8:00 PM by Faculty
March 28	Thurs.....	Last Day to Make Up “I” Grade from Fall & Winter 2018 Semesters
April 6	Saturday	Last Day to Withdraw with an Automatic “W” – Full Term
April 19–20	Fri.-Sat.....	No Daytime, Evening or Saturday Classes – College Closed
May 4	Saturday	Classes End
May 6–11	Mon.-Sat.	Final Examinations
May 13	Monday.....	Final Grades Due by Faculty at 10:00 AM
May 15	Wednesday	Commencement (This date is tentative)
May 27	Monday.....	College Closed

Summer 2019

Summer Session – 1st 5-Week Option

May 20	Monday.....	Classes Begin – Full Term and Online
May 21	Tuesday.....	Last Day for Course Change or Late Registration
May 27	Monday.....	College Closed
June 1	Saturday	Last Day to file an Application for August Graduation (No August graduation ceremony will be held)
June 13	Thursday	Last Day to Withdraw with an Automatic “W”
June 20	Thursday	Classes end for TR classes
June 24	Monday.....	Classes end for MW and MTWR classes
June 25	Tuesday.....	Final Examinations for TR classes
June 26	Wednesday	Final Examinations for MW and MTWR classes
June 28	Friday.....	Grades Due by Faculty

Summer Session – 10-Week Option

May 20	Monday.....	Classes Begin – Full Term and Online
May 24	Friday.....	Last Day for Course Change or Late Registration
May 27	Monday.....	College Closed
June 1	Saturday	Last Day to file an Application for August Graduation (No August graduation ceremony will be held)
July 4	Thursday	College Closed – No Daytime or Evening Classes
July 1–5	Mon.-Fri.....	No Daytime or Evening Classes
July 14	Sunday.....	Last Day to Withdraw with an Automatic “W”
August 1	Thursday	Classes end for TR classes
August 5	Monday.....	Classes end for MW and MTWR classes
August 6	Tuesday.....	Final Examinations for TR classes
August 7	Wednesday	Final Examinations for MW and MTWR classes
August 9	Friday.....	Grades Due by Faculty
August 20	Tuesday.....	Summer Graduate Degrees Awarded (No Ceremony)

Summer Session – 2nd 5-Week Option

July 8	Monday.....	Classes Begin – Full Term and Online
July 9	Tuesday.....	Last Day for Course Change or Late Registration
July 30	Tuesday.....	Last Day to Withdraw with an Automatic “W”
August 7	Wednesday	Classes end for MW classes
August 9	Friday.....	Classes end for TR and MTWR classes
August 12	Monday.....	Final Examinations for MW and MTWR classes
August 13	Tuesday.....	Final Examinations for TR classes
August 15	Thursday	Grades Due by Faculty

Lehigh Carbon Community College reserves the right to make changes to tuition and fees, academic regulations, or programs of study during the 2018-2019 academic year.

Faculty Excellence Award

2017 HOLLY MORRIS

Professor of Biology Holly Morris received the 2017 Faculty Excellence Award. Holly is a well respected leader in the science department. She is supportive, kind, and always willing to help anyone who asks. She does so much for and outside of the department, whether she is the current coordinator or not. She is dedicated to the success of her students, colleagues, the college and the community.

Holly teaches a variety of courses, including honors sections of Biology 110/111. She is co-writing the General Biology 110/111 lab manual for publishing, and co-writing the genetics lab manual. She has demonstrated that she is creative and enthusiastic in the classroom, and motivates students while challenging them and holding them to high standards.

Holly has been involved with writing grants over the years. One National Science Foundation grant that was awarded was a five-year collaborative effort between DeSales University, Lafayette College, and LCCC, for which she was co-PI. Since 2006, Holly has been an active trainer and classroom adopter of Reading Apprenticeship. Committees Holly has been on include: curriculum, honors council, promotion, academic standards, the LMS search committee, the biology TAOC committee and multiple search committees. In addition, she has been the science division coordinator for 14 (not all consecutive) years. She is also a member of the Human Anatomy and Physiology Society, through which she stays up to date on changes in the field and communicates with other professionals.

In addition to her committee work and leadership roles at LCCC, Holly has applied for and received multiple grants, including:

*Science in Motion – Pennsylvania Department of Education, Coordinator, 2013-14, 2014-15, 2015-16, 2016-17.

*A Multidisciplinary/Intercollegiate Collaborative Experience Using Recombinant Yeast Assay to Quantify Estrogenic Compounds in Wastewater (DeSales University) – Course, Curriculum, and Laboratory Improvement–Adaptation and Implementation, NSF, Co-PI, 2003-2006.

*Mathematics and Science Partnership of Greater Philadelphia (La Salle University) – Math and Science Partnership, NSF, Co-PI, 2003-2008.

*Expansion of Horticulture Program – Secondary and Two-Year Postsecondary Agriculture Education Challenge Grant, U.S. Dept. of Agriculture, PI, 2003-2006.

Most recently, Holly applied for a grant from Steelcase, Inc. for furniture for an active learning center that would allow classroom flexibility for students to collaborate with each other and become more engaged in course content. If awarded, the Steelcase grant will be worth \$65,000 in classroom furnishings.

Holly is an extraordinarily active, productive, and positive member of LCCC.

George W. Elison Faculty Service Award

2017 MELANIE TURRANO

Professor of English Melanie Turrano received the 2017 George W. Elison Faculty Service Award. She employs innovative, creative approaches, as is evident in her redesign of ENG 105, a course that has been on the books for several decades without much revision or change for most of that time. Her approach is innovative, meets students' intellectual and non-cognitive needs, and shakes up a course badly in need of some good PR from faculty, students, and administrators alike. Her approach is also informed by recent scholarship in rhetoric and composition and by the positions of professional groups, including the Modern Language Association, the National Council of Teachers of English, and the Conference on College Composition and Communication. Melanie's work was featured in the college's Winter 2015 issue of *Aspire* in an article about ALP that highlighted efforts by Melanie, Dr. Carrie Myers, Scott Keim, and Jennifer Myskowski.

Melanie brings a rare energy and enthusiasm to the classroom while maintaining very high standards.

Melanie brings together a positive attitude, positive energy, and genuine engagement with students and with ideas as she challenges students to have original, genuine experiences with literature and to form original arguments about ideas and significances. Melanie challenges students to think for themselves, to develop intellectual muscle, to read what is difficult and use deliberate, effective methods to unpack what art seems to conceal.

She motivates students by speaking their language, by spelling out for them the relevance of individual reading and writing assignments, the opportunities presented in course materials and class activities. She also keeps a running list of preparation sections, and she pushes students to reach the point at which 100% of attending students are prepared for class.

Finally, Melanie is a recognized leader who is respected by the college community, especially by faculty. She's practically an institution at the Morgan Center. Melanie has led the Faculty Association's negotiating team for the last two contract negotiations, and in and beyond our division, when she speaks, people listen, because we know that she knows what she's talking about. As an innovator, she is an outstanding faculty member.

Adjunct Faculty of the Year Award

2017 STEPHEN ROMAN

Adjunct faculty member Stephen Roman received the 2017 Adjunct Faculty of the Year Award. Stephen demonstrates the excellence and commitment to teaching that provides our students with quality instruction to prepare them for academic success and achievement. He has been teaching with the Social Sciences division and has taught at all of our campuses as well as within our dual enrollment program.

As the northern tier sites were being developed, Stephen took a very active role in offering his services to the students and staff at these facilities. He participated in planning meetings, offered his innovative ideas as to enrollment and retention initiatives, worked amongst the student scheduling needs to teach needed courses, and assisted in community events to bring recognition to the presence of LCCC within our communities. His presence is well known and respected at our sites as he spends time outside of the classroom at the facilities preparing for courses, meeting with students, or talking with other faculty. He has been an invaluable mentor to LCCC adjunct staff in all disciplines.

Stephen has been extremely instrumental in the development of the support group for our military veterans. He continues to support this initiative as well as the incorporation of student lounges for these students at all of our campus locations. He has organized many of the veteran's day activities at the college and has presented at such events as well.

Believing and committing to the mission and vision of a comprehensive community college, Mr. Roman has taken an active role in the promotion of and recruitment for our aviation program. With his network of contacts, based upon his own military experience, he works closely with our aviation faculty and the staff at Indian Town Gap to offer coursework in aviation. Stephen believes in the college and all that we can offer to the many members of our communities. He believes in and practices the concept of giving back to one's community.

Stephen Roman demonstrates the excellence and commitment to teaching that provides our students with quality instruction to prepare them for academic success and achievement. He is well respected by staff, faculty, and community members. It is rare to have an event at the college or with our students in which Stephen is not present.

Vice President's Faculty Recognition

2017 MARY RASLEY

Professor of Computer Science Mary Rasley received the 2017 Vice President's Faculty Recognition Award. Mary goes well above and beyond expending many hours of her own time to jointly craft a curriculum for Program and Project Management training to more than half of the IT department staff. This has proven to be invaluable training to develop the staff's skills. The IT Department and Institutional Reporting will be positioned for managing and delivering CapEX projects with service delivery best practices, providing significant benefit to LCCC for years to come.

The benefits to LCCC going forward will be significant as a result of Mary's collaborative outreach and support.

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The College will not discriminate against any employee, applicant for employment, student, or applicant for admission on the basis of gender, gender identity, gender expression, sex, race, ethnicity, color, national origin, religion, age, disability, veteran or military status, genetic information, family or marital status, sexual orientation, or any other protected class under applicable local, state, or federal law, including protections for those opposing discrimination or participating in any grievance process on campus or within the Equal Employment Opportunity Commission or other human rights agencies. This policy applies to all terms and conditions of employment, including recruiting, hiring, placement, promotion, termination, layoff, recall, transfer, leaves of absence, compensation, and training. Inquiries about this policy and procedure may be made internally to the Director of Human Resources/ Title IX/Equity Coordinator, Office of Human Resources, 4525 Education Park Drive, Schnecksville, PA 18078, 610-799-1107. 2018-09-11

Welcome to LCCC



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Accreditations

Lehigh Carbon Community College is approved as an institution of higher education by the Department of Education of the Commonwealth of Pennsylvania. The college is authorized to award the Associate in Arts, the Associate in Science, and the Associate in Applied Science degrees, as well as certificates and diplomas in specialized career areas.

Lehigh Carbon Community College is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104. (267-284-5000) www.msche.org. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The following programs have received additional accreditation, certification or endorsement:

- **Associate Degree Nursing**
Accreditation Commission for Education in Nursing (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, Georgia 30326
- **Aviation Science**
Federal Aviation Administration (FAA)
800 Independence Ave.
Washington, DC 20591
- **Business Associate Degree Programs**
(Accounting A.A.S., Business Administration A.A., Business Management A.A.S., Hotel Resort Management A.A.S., and Human Resource Management A.A.S.)
Accreditation Council for Business Schools and Programs (ACBSP)
11520 W. 119th St.
Overland Park, KS 66211
- **Early Childhood Education**
National Association for the Education of Young Children (NAEYC)
1313 L St. NW, Suite 500
Washington, DC 20005
- **Early Childhood Education/Early Intervention**
National Association for the Education of Young Children (NAEYC)
1313 L St. NW, Suite 500
Washington, DC 20005
- **Early Learning Center Lab School**
National Association for the Education of Young Children (NAEYC)
1313 L Street NW, Suite 500
Washington, DC 20005-4101
- **Health Information Technology**
Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
233 N. Michigan Ave., Suite 2150
Chicago, IL 60601
- **Human Services**
Council for Standards in Human Service Education (CSHSE)
3337 Duke Street, Alexandria, VA 22314
- **Kitchen and Bath Design**
National Kitchen and Bath Association
687 Willow Grove St.
Hackettstown, NJ 07840
- **Medical Assistant**
The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of Medical Assisting Education Review Board (MAERB).
Commission on Accreditation of Allied Health Education Programs (CAAHEP)
25400 U.S. Highway 19 North, Suite 158
Clearwater, FL 33763
- **Occupational Therapy Assistant**
Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA)
4720 Montgomery Lane, Suite 200
Bethesda, MD 20814-3449
- **Paralegal Studies**
American Bar Association (ABA)
Standing Committee on Paralegals
541 N. Fairbanks Court
Chicago, IL 60611
- **Physical Therapist Assistant**
Commission on Accreditation in Physical Therapy Education (CAPTE)
1111 N. Fairfax St.
Alexandria, VA 22314
- **Practical Nursing**
Accreditation Commission for Education in Nursing (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, Georgia 30326
- **Tutoring Program - Advanced Level Certification**
National Association for Developmental Education (NADE)
500 N. Estrella Parkway, Ste. B2 PMB 412
Goodyear, AZ 85338
- **Veterinary Technician**
American Veterinary Medical Association (AVMA)
1931 N. Meacham Road, Suite 100
Schaumburg, IL 60173

Vision for Excellence at LCCC

Lehigh Carbon Community College will promote academic excellence, student achievement, and support of diverse populations as a comprehensive community college.

Mission

Lehigh Carbon Community College serves the community by providing high quality learning experiences that are affordable and accessible.

Value Statement

As a student-centered learning institution, Lehigh Carbon Community College values:

Learning: the development of foundational knowledge, critical thinking skills, and self-awareness, that advance intellectual, ethical, and social responsibility.

Student Development: best practices that engage and challenge students; foster individual growth, leadership and service; and intentionally support holistic development.

Instructional Excellence: an environment of best practices that engages and challenges students, advances intellectual curiosity; fosters lifelong learning with quality teacher-student contact and use of current technology.

Diversity: open dialogue for increased understanding of differing viewpoints; offering experiences that embrace the diversity of humanity.

Access: opportunity for students to pursue learning in an environment that supports identification and achievement of goals within their ability.

Partnerships: relationships that provide innovative and entrepreneurial solutions to meet the demands of the community and region's economic development and workforce needs.

Employees: contributions, capabilities, collegiality, teamwork and professional development of our employees.

Continuous Improvement: decision-making based on assessment, solid planning and effective management of resources.

Goals

To advance the mission and vision of Lehigh Carbon Community College, five major themes for collegewide goals were identified:

Overarching: We are here to serve the best interests of our students.

- Improve students' chances for success: through college readiness, school district, workforce and community partners.
- Broaden the understanding and application of best practices in enrollment management.
- Foster student learning, student development, academic success, and persistence to goal attainment.
- Ensure a diverse and inclusive environment to facilitate student learning and engagement.
- Act responsibly and ethically in the stewardship and development of institutional resources.

The specific objectives related to these goals change annually; however, the college's emphasis on these five goals remains constant.

Components

Lehigh Carbon Community College seeks to offer to those individuals who have the ability to benefit, programs and services related to the following components of a comprehensive community college:

- career programs;
- developmental and remedial education;
- lifelong learning and community education; and
- transfer programs.

Academic Excellence

Academic Excellence is mastery of knowledge in a content area and of the analytical, practical, and/or creative skills to use this knowledge effectively.

Academic Excellence at LCCC is fostered by exemplary teaching, rigorous curricula, comprehensive student services and synergistic partnerships.

Academic Excellence produces personal, professional and intellectual growth of learners.

Collegewide Student Learning Competencies

It is fundamental that students be competent within their specific academic discipline. In addition to program-specific competencies, all students earning an associate degree will acquire skills and competencies that are integrated throughout the curriculum and student life. Specifically, students will develop an ability to do the following:

- think critically;
- communicate effectively;
- apply quantitative reasoning;
- participate cooperatively within a team;
- use current technology effectively;
- apply information literacy skills;
- analyze human diversity;
- apply scientific reasoning; and
- evaluate ethical aspects of decision making.

It is the college's belief that in acquiring these competencies students will develop confidence in their academic potential and recognize their own strengths and limitations.

General Education Philosophy

General education prepares people to live satisfying lives, lives in which they consider carefully what it means to act intentionally in the world. In other words, they think carefully about their relationships to nature, to society and to themselves.

Education is the cultivation of particular intellectual habits that people can use to guide their lives. Educated people think critically about their own and others' thinking.

They make connections, building upon what they already have learned, and they understand, appreciate and apply various ways of learning and knowing. They identify, frame, and examine problems, and they generate, evaluate and select solutions. By reflecting on their own and others' experiences, they test ideas and opinions, review practices and evaluate conclusions. People who employ these intellectual habits are 'lifelong learners.'

A general education program is broad in the sense that it prepares people to think and act universally: educated people move and serve in multiple, diverse, complex contexts of our global community. They are prepared to engage peoples who have diverse backgrounds and experiences; who form varying concepts of themselves and others; who value a variety of ideas, resources and behaviors; and who communicate through a wide range of languages and technologies. Navigating our world requires not only the guidance that intellectual habits can provide, but also both a genuine appreciation of diversity, and the personal and interpersonal skills necessary for living and communicating peaceably, ethically and responsibly in various environments. People with a general education have these characteristics, and therefore they are fitted to engage responsibly in civic activity and to assume leadership roles in contexts of many kinds.

Our general education program prepares people to live satisfying lives.

Sponsorship

The Commonwealth of Pennsylvania Community College Act 484 of 1963 provides the authority to develop a system of comprehensive public two-year colleges in the state.

In accordance with the provisions of the act, the college is sponsored by nine school districts in Lehigh County and four school districts in Carbon County.

The following school districts constitute the sponsorship of Lehigh Carbon Community College:

- Allentown School District
- Catasauqua Area School District
- East Penn School District
- Jim Thorpe Area School District
- Lehighton Area School District
- Northern Lehigh School District
- Northwestern Lehigh School District
- Palmerton Area School District
- Panther Valley School District
- Parkland School District
- Salisbury School District
- Southern Lehigh School District
- Whitehall-Coplay School District

Main Campus Facilities

Schnecksville Campus (Main Campus)

Lehigh Carbon Community College is located on a beautiful 153-acre campus in Schnecksville, Pa., about 10 miles north of Allentown. The main campus includes the following facilities:

Student Services Center (SSC) houses administrative and student services offices, including admissions, registration and student records, financial aid, student accounts, advising and transfer center, veterans and returning adults lounge, testing center, counseling center and career development center.

Academic Resource Center (ARC) houses the cafeteria and bookstore on the second floor, classrooms and labs.

John G. Berrier Hall (BH), named for the founding president and president emeritus of the college, houses a gymnasium, fitness center, and specialized physical education and recreational facilities.

The Scheller-Woodman Community Services Center (CSC) houses the fire and public safety programs, workforce development, among many others. The building has a large conference center to be rented out for community events, etc. with a fully-equipped kitchen for catering.

If you are interested in scheduling an event, please contact LCCC's Special Event and Meeting Services Office at 610-799-1175 or online at www.lccc.edu/event-meeting-services.

Rothrock Library (LB) houses an array of books, resources and technology for student's use. The Foundation and Alumni Conference Center is also located within the library building.

Science Hall (SH) houses numerous classrooms, science laboratories, Dr. C. Eugene Wilson Educational Support Center, Early Learning Center, Health Sciences Center and Fowler Education Center.

Technology Center (TC) includes 24 classrooms and laboratories for LCCC's Technology, Computer Science and Media programs.

Directions to Community Locations

To Lehigh Carbon Community College, the community is our campus. Various locations help to make LCCC more accessible to students.

LCCC at LVIA

Lehigh Valley Industrial Park III
600 Hayden Circle, Allentown, Pa. 18109
Phone: 610-264-7089 Fax: 610-264-2129

Directions: Take Route 22 to Route 987 North (Airport Road). At the first traffic signal, turn left onto Postal Road. Follow Postal Road approximately 1 mile to a “Y” in the road. (Hayden Circle bears right; Postal Road bears left.) Hangar 7 is visible to the right at this point. Bear right at this fork and proceed to Hangar 7 at 600 Hayden Circle.

LCCC Allentown

718 Hamilton St., Allentown, Pa. 18101
Phone: 610-799-1940 Fax: 610-799-1210

Directions from Route 22: Take the Seventh Street (Center City Allentown) Exit. Donley Center parking is on the right after the intersection at Seventh and Hamilton at the statue.

Directions from I-78: Take the Lehigh Street Exit. Turn right onto Lehigh Street at bottom of ramp. Pass Parkway Shopping Center and stay right as road comes to a “Y.” Pass Ambassadors’ ball park and Zandy’s steak shop on left; stay to left. Turn left onto Eighth Street Bridge. Cross Union and Walnut streets. Turn right onto Hamilton Street. LCCC Allentown is on the right at the intersection of Hall (the half street between Eighth and Seventh) and Hamilton streets before the monument.

Parking: Meter parking is available on the street (currently \$2.00 per hour (50 cents per 15 minutes) with a maximum of two hours. The meters are enforced from 8 a.m. to 9 p.m., except Sundays.

The parking lot behind us is \$1.00 per hour or \$6 per day and \$3 per night except on Phantoms’ game nights (\$6 per night) and event nights (\$10 per night). To enter the lot, turn right onto Seventh Street at the monument. The lot entrance is on the right. The entrance to the college is on Hamilton Street.

The Baum School of Art

510 Linden St., Allentown, Pa. 18101
Phone: 610-433-0032

Directions: From North, take Route 145 South (also known as MacArthur Road in Whitehall), which becomes Seventh Street in Allentown. Get into left lane when road becomes one way. After that point, travel six traffic signals to Turner Street and turn left. Travel two blocks to Fifth Street and turn right. Travel one block to Linden Street and turn right. Baum School of Art is on the left.

LCCC Jim Thorpe

1100 Center Street, Jim Thorpe, Pa. 18229
Phone: 570-669-7010 Fax: 610-669-7013

From Palmerton: Travel South on Route 209 to Jim Thorpe. After passing through downtown Jim Thorpe, continue on Route 209 South and make a right onto Route 903 at the traffic signal in front of the bridge. Continue on Route 903/North Street and make a right onto Olympian Way (after St. Luke’s Urgent Care). Jim Thorpe Senior High School is straight ahead. The LCCC student parking lot is located behind the Jim Thorpe faculty parking lot on One Olympian Way. LCCC Jim Thorpe is located in a residential area, so please be mindful of our neighbors and do not block driveways or fire hydrants.

From Coaldale: Travel North on Route 209 to Jim Thorpe. At the traffic signal in Jim Thorpe, turn left onto Route 903 at the bridge. Continue on Route 903/North Street and make a right onto Olympian Way (after St. Luke’s Urgent Care). Jim Thorpe Senior High School is straight ahead. The LCCC student parking lot is located behind the Jim Thorpe faculty parking lot on One Olympian Way. LCCC Jim Thorpe is located in a residential area, so please be mindful of our neighbors and do not block driveways or fire hydrants.

LCCC Schnecksville, Main Campus

4525 Education Park Drive, Schnecksville, Pa. 18078
Phone: 610-799-2121 Fax: 610-799-1527

Directions from Northeast Extension of Pennsylvania Turnpike: Exit at Lehigh Valley (Exit 56), to Route 22/I-78 East. Travel less than 1 mile on Route 22/I-78 East. Take the Route 309 North Exit. Continue North on Route 309 for 6 miles. Look for a stop light, and turn left at the “Education Park” sign. (If you get to the intersection of Routes 873 and 309, you have passed the college.) The building on the left is Lehigh Career & Technical Institute. LCCC is on the right. The flagpole marks the entrance to the Student Services Center.

From Route 22/I-78 (Easton, Bethlehem, and Allentown): Travel West on Route 22, exiting on Route 309 North (Tamaqua).

If you get to the Northeast Extension of the Pennsylvania Turnpike, you have passed Route 309 North Exit. Continue North on Route 309 for 6 miles. Look for a stop light, and turn left at the “Education Park” sign. (If you get to the intersection of Routes 873 and 309, you have passed the college.) The building on the left is Lehigh Career & Technical Institute. LCCC is on the right. The flagpole marks the entrance to the Student Services Center.

Parking: Park in Visitor’s Parking Lot C or any student lot.

LCCC Tamaqua

234 High St., Tamaqua, Pa. 18252
Phone: 570-668-6880
Fax: 570-668-7296

Directions: Take Route 309 North to first traffic light in Tamaqua (Spruce Street). Turn left. Proceed up hill and continue straight at traffic light at Hunter Street. Travel to first stop sign and turn right onto Oak Street. Travel up steep hill to a “T” in the road. Visible ahead is the Lisa Jane Scheller Student Center. Turn right onto Van Gelder Street. Morgan Center is on left. Parking is accessible from Van Gelder and High Streets.

Admissions



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Start Here | Go Anywhere

Admission Policy

In keeping with its mission and goals, the college offers admission to anyone who wishes to further his or her education and can benefit from such an experience.

The college views enrollment as a process to assist students in continuing their education to achieve personal and career goals.

Admission is not viewed as a process that uses traditional examinations and entrance requirements to reject those who wish to learn. The college considers learning to be a lifelong process and recognizes each individual's previous experiences as valuable and important in future educational planning.

Application Process

Applicants must complete and submit the following to the Office of Registration/Student Records:

- LCCC "Application for Admission"

All applicants are encouraged to submit a high school transcript or verification of an equivalency diploma—Test of General Education Development (GED). These documents are required of applicants requesting financial aid as well as applicants to the following programs of study: Early Childhood Education, Health Care Sciences, Human Services, Paralegal, Professional Pilot and Veterinary Technician. (See "Special Admission Program Requirements.")

High School Students

High school students may have the opportunity to enroll in LCCC credit courses. Students can earn transferable credits and may be able to use these credits towards high school graduation.

High school students that are in 9th grade, 14 years or older can apply to LCCC as early admissions or dual enrollment. Students younger than 14 will need to contact Admissions at 610-799-1575 to set up an interview and provide supporting documentation.

Both early admissions and dual enrollment programs require the student to complete an online LCCC high school application for admissions. Students are required to take the college's assessment tests or submit exemption scores.

In many districts, dual enrollment courses are offered on the high school campus. Dual enrollment questions can be answered by your high school guidance office or the Director of High School Connections at LCCC at 610-799-1120.

All high school students, under the age of 18 years, must earn a high school diploma (or equivalent) prior to graduation from LCCC.

Under 18 Years of Age and Not Enrolled in High School

If under 18 years of age and not currently enrolled in high school, graduation from high school or an official alternative secondary school diploma is required.

Applicants must complete and submit the following to the Office of Registration/Student Records:

- LCCC Application for Admission
- verification of high school completion (high school transcript or GED), and

- students who wish to be considered for full-time enrollment at LCCC must submit all of the above and a letter of recommendation from the high school guidance counselor.

Additional Requirements and Policies

- The college has no application deadline and reserves the right to close a program when a large number of applications are received. Applicants are encouraged to apply as early as possible to ensure ample time to complete the enrollment process.
- "Some HCS programs require a health history and physical examination by a licensed healthcare professional (MD, DO, NP, PA) in order to fully participate in clinical experiences.
- The college reserves the right to guide the program and course selection of entering students. Remedial or developmental courses will be required in cases in which applicants have deficiencies in areas important to their success in college.
- The college is limited in the number of students it can admit each year to some Health Care Sciences degree and certificate programs, the Veterinary Technician degree program and Professional Pilot degree program. Admission to each of these programs is competitive and may include a personal interview. Early application is encouraged. For more details, contact the Admission Office at 610-799-1575.

Commonwealth Secondary School Diploma

The Pennsylvania Department of Education Division of Adult Education will issue a high school diploma to students who never completed high school upon receipt of an official college transcript showing satisfactory completion of 30 college credits.

A high school diploma may not be issued in advance of the student's high school graduation class. Students who pursue this program at the college may be limited to part-time study until the diploma is earned.

Please refer to the Pennsylvania Department of Education's website at www.education.pa.gov for more information on the Commonwealth diploma. Once the 30 college credits have been completed, the student requests an official transcript from Registration/Student Records to be mailed with the official diploma request form (PDE-6005) and state identification to the Pennsylvania Department of Education.

High School Equivalency Programming

Lehigh Carbon Community College offers a College and Career Readiness program where individuals can prepare for the Commonwealth Secondary School Diploma examinations (GED® and HiSET®) as well as administration of the examinations.

Please visit www.lccc.edu/ged or call 610-799-1955 for more information about the program and testing.

Returning Students in Good Standing

Students who attended classes at the college previously but then discontinued their enrollment in the past 12 months or more must complete an online returning student application. Students are encouraged to make an appointment with an advisor if assistance is needed to clarify a new program of study. No fee is charged for readmission processing. More information about name/address changes can be obtained in the Office of Registration/Student Records or by calling 610-799-1171.

Guest/Visiting Student – Non-degree seeking

A guest/visiting student is a student who does not intend to receive a degree or certificate from LCCC. If you are a student who is already enrolled at another college or university and you plan to transfer credits earned at LCCC back to your home institution, you must check with your home school on any transfer course requirements. You must meet any course prerequisites or corequisites prior to enrolling in LCCC courses. You will not be eligible for any federal, state, or institutional financial aid while enrolled as a guest/visiting student.

International Student Admission

Lehigh Carbon Community College welcomes applications from international students who can benefit from the educational programs at the college.

International students are encouraged to begin their admission process six months prior to the start of the school semester to allow ample processing time by both LCCC and the U.S. Citizenship and Immigration Service. A more detailed guide to admission requirements and an application packet can be obtained by calling the foreign student advisor at 610-799-1137 or emailing international@lccc.edu.

The following documentation must be provided:

- a completed application for admission;
- financial resource statements showing sufficient funds to cover tuition and living expenses for at least one year; and
- evidence of high school graduation and a minimum of two years of English language instruction.

When the student applies to LCCC, a tuition deposit is required before an I-20 is issued.

Important facts for international students:

- The college has no housing on or off campus.
- Public transportation is limited. The majority of international students who attend LCCC live with sponsors who can provide the student with a car or transportation to the college.
- International students are ineligible for financial aid.
- International students may not be employed off campus while they are students.
- International students must maintain full-time status, which is a minimum of 12 credits. (See “Tuition and Fees” section.)
- It is recommended that students purchase health insurance upon entry into the United States.

International Student Advisor

International students are required to schedule an appointment with the International Student Advisor as soon as they arrive in the area and must bring their passport, I-94, and I-20 to update and maintain their SEVIS records. The international student advisor will assist international students in course selection throughout their academic career and will advise students on responsibilities for maintaining legal status while in the United States. For more information, please email international@lccc.edu.

Advanced Standing Transferring Credit to LCCC

Individuals who have attended other accredited colleges and universities should submit official transcripts for evaluation of transfer credit at the time of enrollment. Grades of “D” and “F” will not be accepted for transfer credit. Only physical education credits with a pass grade will be accepted. Other academic courses without a letter grade will not be accepted. Other previous educational experiences must be evaluated by the Office of the Associate Dean of Professional Accreditation and Curriculum. Contact Academic Services at 610-799-1587.

Advanced Placement

The college participates in the advanced placement program of the College Entrance Examination Board (CEEB). Under this program, the college grants credit and advanced placement to students with completed college-level courses in approved secondary schools with a score of at least three in the Advanced Placement Tests of the CEEB. Applicants for credit for advanced placement should request the CEEB to send their scores to the Office of Registration/Student Records. Examination score reports should be submitted to the Office of Registration/Student Records. Contact the Advising Office at 610-799-1137 for additional information.

Standardized Examinations

Standardized examinations measure knowledge of the material covered in introductory college courses. The standardized examination program is an option for individuals who have experienced learning in an informal setting.

The College Level Examination Program (CLEP) is a national program of credit by examination. The two types of CLEP examinations are general and subject. General tests assess knowledge usually acquired through the first two years of college work. Subject tests assess knowledge in specific college courses. (clep.collegeboard.org)

The Excelsior College Examination is a standardized national program offering examinations in liberal arts, business and technical areas. (www.excelsior.edu)

The Defense Activity for Non-traditional Education Support Program (DANTES) is a standardized subject examination offered in various college and technical subjects. The examinations cover material usually taught in one-semester or one-year post-secondary courses. Contact the Advising Office at 610-799-1137 for additional information. (www.dantes.doded.mil)

Challenge Examinations

Students who cannot fully document their previous learning in a portfolio can request credit by examination for LCCC courses. These examinations are developed by LCCC faculty members. This option is available for a limited number of courses for which portfolio development is inappropriate, standardized examinations are unavailable, and a challenge examination has been developed. Contact Academic Services at 610-799-1587 for additional information.

Credit for Prior Learning

Lehigh Carbon Community College believes that college-equivalent learning takes place in many different environments. Learning could have occurred away from a college classroom through on-the-job experience, professional workshops, technical and business schools, military, volunteer training or hobbies.

A number of options can be used to convert prior learning into college credit. Contact Academic Services at 610-799-1587 for more information on obtaining credit for prior learning.

Credit for Business-Related Noncollegiate Courses

The college recognizes credit recommendations from the American Council on Education (ACE) for courses offered by noncollegiate organizations. These courses are offered by professional societies, federal agencies, industries and labor unions.

Credit for Life Learning

Students who desire credit for previous learning must compile a portfolio, which is an organized folder of information about specific past experiences and accomplishments. The portfolio documents skills, experience, and learning that are equivalent to the skills, experience, and learning that other students have gained through the traditional classroom format. Each completed portfolio is assessed by the appropriate LCCC faculty member(s). Students interested in compiling a portfolio for evaluation should call Academic Services at 610-799-1587.

Credit for Military Experience

Veterans can have previous military experience evaluated for transfer credit. The college evaluates previous military training in accordance with the recommendations of the American Council on Education through the Guide to the Evaluation of Educational Experiences in the Armed Services. Validated records of training programs or military courses must be submitted to Registration/Student Records to begin this process. These records include DD214/296 and military transcripts from the Joint Services Transcript (JST). Contact the Advising Office at 610-799-1137 for additional information.

Special Admission Program Requirements

Additional admission information and requirements for specific programs are as follows:

Note: Meeting the minimum requirements does not guarantee admission into the programs.

Associate Degree Nursing (ADN)

- High school diploma or GED and successful completion of appropriate high school or post-secondary courses.
- Completion of a high school program, which includes the following: four units English, three units social studies, two units mathematics (one of which is algebra, with at least a "C"), and two units of science with a related laboratory or equivalent. If these courses were not successfully completed in high school, they may be taken at LCCC. This requirement should be completed before an applicant will be considered an ADN candidate.
- Acceptable scores on LCCC skills assessment.
- Completion of the Test of Essential Academic Skills (TEAS). The fee for the examination is the student's responsibility. (www.atitesting.com)
- Complete an application for program admission.
- Submission of official transcripts from all previous education (high school, trade, technical, college).
- Admission is competitive, based upon the Test of Essential Academic Skills, previous academic achievement, and satisfactory completion of the program application by the stated due date.
- Any student who has successfully completed, with at least a "C," Anatomy and Physiology I and II (BIO 163, 164) and Microbiology (BIO 220) more than seven years before admission or readmission will be required to repeat these courses.
- The Pennsylvania State Board of Nursing and healthcare agencies for clinical experiences have specific health requirements that must be met by each student before participating at the clinical agency.
- To participate in required clinical experiences a "no record" status must be reported on the Pennsylvania Child Abuse History Clearance. The Pennsylvania State Police Criminal Record Check results must fall within the guidelines of the law, as set forth by the Commonwealth of Pennsylvania. An FBI Background Check is required. Admission to the program may be revoked upon review of the results.
- Licensed Practical Nurses (LPNs) who wish to enter the ADN program with advanced standing must meet the LCCC admission criteria, complete the regular admission process, and submit proof of current licensure.
- The deadline for submission of the application for program admission and completion of the TEAS is February 1 for application to the nursing class beginning in fall.

Dental Hygiene

In cooperation with Montgomery County Community College

- The student must meet the following ELIGIBILITY CRITERIA to be considered for selective admission into the clinical portion of the Dental Hygiene Program:
- All students must submit a high school transcript or G.E.D., including one year each of chemistry with a laboratory component with a grade of “C” or better (equivalent courses taken in college would be acceptable substitutes). All science course including Chemistry with laboratory course must be successfully completed within five years prior to enrolling in Dental Hygiene courses.
- All applicants must submit official college transcript(s), if applicable.
- Additionally, one of the following credentials must be submitted:
 - ACT composite score of 22.
 - SAT score (3/1/05-2/29/16) minimum of 1350; SAT score (3/1/16-present) minimum of 1000.
 - College transcript including 14 semester hours consisting of two 4-credit lab science courses and two 3-credit courses from the general education component of the Dental Hygiene curriculum. Grades for the four courses/14 credits must be a “C” or better and result in a GPA of at least 2.5. All Science courses must be successfully completed within five years prior to enrolling in Dental Hygiene courses.
 - BIO 131, BIO 132, BIO 140 must be completed with a grade of “C” or better and an overall GPA of 2.5.
- All applicants must take college placement tests in English, Mathematics, and Reading and must place above the developmental level prior to enrolling in Dental Hygiene. Exemptions to placement testing may occur based on coursework from LCCC.
- All applicants are required to demonstrate a minimum of six hours of observation in a dental office in order to ensure that the applicant is familiar with the work environment in which most dental hygienists are employed. Written verification from the dentist or dental hygienist, on dental office letterhead, is required of each applicant to verify current dental office employment or completion of the six-hour observation in a dental office. Verification must be submitted to the Dental Hygiene Advisor (sconnoll@mc3.edu) prior to the last day of the petition
- All eligible applicants are required to submit an electronic petition to be considered for admission in the Dental Hygiene program. The petition can be found on the Dental Hygiene website during a determined petition period.

Early Childhood Education, Early Intervention, Paraeducator, Teacher Training

- Acceptable scores on LCCC skills assessment.
- Agencies for fieldwork experiences may have specific health requirements that must be met by each student before attending.
- High school diploma or GED and successful completion of appropriate high school or post-secondary courses.
- Special program costs include health examinations, criminal record check, child abuse history clearance, books, supplies and transportation to Teacher Education agencies.
- To participate in the required fieldwork experiences, a “no record” status must be reported on the Pennsylvania Child Abuse History Clearance. The Pennsylvania State Police Criminal Record Check results must fall within the guidelines of the law, as set forth by the Commonwealth of Pennsylvania. Admission to the program may be revoked upon receipt of these results.

Human Services

- Submission of high school transcript or GED and transcripts from all post-secondary institutions attended.
- Acceptable scores on LCCC skills assessment.
- Maintain a 2.2 cumulative GPA in the Human Services program and earn a minimum “C” grade in all Human Services courses.
- To participate in fieldwork experiences, students must present the original copy of the Pennsylvania Child Abuse History clearance, the PA Criminal Record, the FBI Background Check Transmittal form and health examination and immunization records to the college. Depending upon the fieldwork site, the student may also be required to present a PA Driver History report, and records of satisfactory tuberculosis screening and Hepatitis B immunization.
- A student having a history of any criminal record is encouraged to check the Prohibitive offenses list (Public Law 169) and discuss any convictions with the program coordinator and the fieldwork site in advance of attendance at the fieldwork agency. Students who possess a criminal record status may experience limitations in available fieldwork placements and future employment in the human services field.
- Any student with a criminal record which bans employment with adults or children will never be eligible to enroll in any human services class requiring service learning, fieldwork, or internship experiences.
- Copies of the submitted records will remain on file at the college for one year after fieldwork coursework is completed.
- The student is responsible for all special program costs: health examinations, immunizations, clearance record fees, books, supplies and transportation to Human Service agencies.
- Human Services students are responsible for locating and selecting fieldwork agency sites. Students are responsible for presenting credential levels required by the fieldwork agency. It is the sole discretion of the fieldwork agency and future employers as to what level of credentialing is required by the position roles and duties at the human service agency. Final approval of the site resides with the program coordinator.

Medical Laboratory Technician

In cooperation with Montgomery County Community College

The student must meet the following eligibility criteria to be considered for selective admission into the clinical portion of the Medical Laboratory Technician Program:

- All students must submit a high school transcript or G.E.D., including one year each of biology and chemistry and two years of math, including algebra, with grades of “C” or better (equivalent courses taken in college would be acceptable substitutes) and ONE of the following credentials:
- ACT composite score of 18.
- SAT score of a minimum 1000.
- College transcript including 14 semester hours consisting of two 4-credit science courses with laboratories and two 3-credit courses from the general education component of the MLT curriculum. The courses must have been taken at an institution in which English is the primary instruction language. Grades for the four courses must each be “C” or better and result in a GPA of at least 2.5. Science courses must be successfully completed within ten years prior to enrolling in MLT courses. All students must take placement tests in English, mathematics, and reading and place above the developmental level prior to enrolling in MLT 110.
- All applicants must submit an Online Petition for Admission to the MLT Program in February of the year they wish to be considered. Criteria such as completion of non-MLT courses, date of application, and date of completion of minimum requirements may be used in the decision process. The Online Petition for Admission is found at: <https://www.mc3.edu/degrees-and-programs/programs/health/medical-laboratorytechnician/petition-for-admission>

Special Note:

Upon acceptance into the clinical portion of the program, the student will be required to submit the following:

- Full medical assessment including physical exam, medical history, and vaccinations or proof of immunity within six months prior to entering the program.
- Hepatitis B vaccination documentation.
- CPR certification for the professional rescuer (approved providers are AHA/ARC).
- Proof of current enrollment in a health insurance plan.
- Proof of a negative drug screen within 30 days of clinical placement.
- “No record” status for PA Child Abuse Clearance, PA State Police Criminal Record Check and FBI fingerprint check.
- Agreement to abide by dress code/personal appearance and other policies set forth by the program and clinical affiliates.

Medical Laboratory Technician

In cooperation with Reading Area Community College

Applicants must:

- Be a graduate of an approved secondary school or hold a high school equivalency diploma.
- Have completed, with grades of “C” or better, two years of biological science (including advanced biology), laboratory chemistry and algebra. If the previous academic experience is lacking or if placement scores indicate the need for preparatory work, the following courses may be used to provide the needed academic background: BIO 110, CHE 106, MAT 105, MAT 160.
- Meet with the MLT program director for an interview to discuss the academic background, the MLT program, and the selective MLT admissions policies before declaring a major of Medical Laboratory Technology. The interview is mandatory.
- No course in the Medical Laboratory Technician Program curriculum, or which is a prerequisite for a course in the curriculum, can be repeated more than once. This requirement includes any courses taken at RACC or at another institution. It also includes courses from which the student may have withdrawn or in which the student earned less than a “C” grade.
- No more than 12 credits of the Medical Laboratory Technician Program curriculum may be repeated. This includes courses taken at RACC and at other institutions. It also includes withdrawals or courses in which the student earned less than a “C” grade.
- Course repeats or withdrawals that are older than ten years may be excluded from consideration in the admissions process at the discretion of the program director.
- The preceding policies will be revised in keeping with the most recent accrediting agency policies.
- A selection committee will review all records, determine the eligibility of students and then select those students who will progress into the clinical experience. The date of enrollment in the Medical Laboratory Technician program will remain as the deciding factor between two equally qualified students. Rotation sites for clinical experience will be assigned by the MLT Selection Committee.
- The granting of the Associates Degree in Applied Science in the Medical Laboratory Technician Program is not contingent upon a student passing any type of external certification or licensure examination.

Special Note:

- The student from Lehigh Carbon Community College who has successfully completed specific general education requirements at LCCC and specific program requirements at RACC may be granted sophomore-level standing and admission to the Medical Laboratory Technician Program per stated selective admission requirements at Reading Area Community College.

Medical Assistant

Additional admission information and requirements for the Medical Assistant program are as follows:

- Applicants are required to have a high school diploma or GED and successful completion of appropriate high school or postsecondary courses.
- Applicants need to apply online for admission to the college.
- Applicants should review Program Information, Steps to Admission, and the Student Handbook on LCCC website.
- Acceptable scores on LCCC placement testing is required, OR current enrollment with successful completion of all developmental classes prior to fall admission. This includes, Math 090, RSS 99, RSS 100, ENG 99 and ENG 100. (See Advising Office for verification of testing exemptions, if applicable.)
- Applicants should schedule an appointment with an academic advisor to review the program requirements and admission procedures.
- Official transcripts from any prior college or technical school must be **received** by the Registrar office and officially evaluated for any transfer credit upon admission to the program.
- Completion of 8 hours of observation is required in a medical office. All observation hours must be completed within a year of application, and the "Observation Verification Form" must be submitted along with the "Medical Assistant Program Application for Admission." Applicants are responsible to secure observation site.
- The Medical Assistant Program Application for Admission must be completed and submitted prior to May 1 for admission to the program in the fall semester of the same calendar year.
- Students must maintain a 2.2 cumulative GPA and earn a minimum of a "C" grade in all required courses of the Medical Assistant program curriculum to continue on in the program.
- Students accepted to the program may only withdraw or repeat one course in the Medical Assistant curriculum, in which they received a grade below "C" to continue in the program.
- Students with keyboarding skills are encouraged to test out of beginner level AOT Keyboarding courses. Students should schedule the level one keyboarding exam in the Testing Center. Upon successfully passing level one, students may register for notification of the "Full Keyboarding Exam" date. A fee is assessed by the college to grant credit hours to your transcript for testing out of Keyboarding courses.
- Special program costs include health examinations, uniforms, books, medical supplies, criminal background checks and clearances. (Specific program costs are found in Student Handbook.)
- To participate in clinical experiences, a "no record" status must be reported on ALL required clearances. See Student Handbook for prohibited offenses and detailed information.

Occupational Therapy Assistant

- Apply to LCCC online, and complete the LCCC OTA paper application available at www.lccc.edu.
- Submission of current or completed high school/GED transcripts, and all college transcripts.
- Completion of placement testing including biology (if required). Visit www.lccc.edu/exemption to find out if the student is exempt from testing. All remedial math, English, and reading courses must be completed prior to applying to the OTA program (must be eligible for MAT 105). Any student who has successfully completed, with a "C" or better, Anatomy and Physiology I and II (BIO 163 and 164), or equivalent at another accredited college more than seven years before admission or readmission will be required to repeat these courses.
- Completion of 10 observation hours at two separate facilities or agencies (5 hours at each site). All observation hours must be supervised by an OTR/L or COTA/L. Have your supervising OTR/L or COTA/L complete the LCCC Observation Hours Form available at www.lccc.edu/ota.
- All of the above requirements must be completed by February 1st to be considered for admission to the Fall OTA program of same year. When all requirements are completed, the candidate will be contacted and be required to complete a self-assessment essay.
- Special program costs include health examinations, immunizations, healthcare and malpractice insurance, CPR, criminal record checks, FBI Finger printing, child abuse clearance, books, supplies and transportation to fieldwork agencies.
- To participate in the required fieldwork experiences, a "no record" status must be reported on the Pennsylvania Child Abuse History Clearance. The Pennsylvania State Police Criminal Record Check results must be completed and fall within the guidelines of the law, as set forth by the Commonwealth of Pennsylvania. An FBI Background Check Transmittal Form and a negative urine drug screening are also required. Admission to the program may be revoked upon receipt of these results. Any student convicted of a felony must contact NBCOT at One Bank Street, Suite 300, Gaithersburg, MD 20878, #301-990-7979, to discuss eligibility for the NBCOT exam.
- Admission to the OTA program is selective and highly competitive. Meeting the minimum requirements does not guarantee admission to the program. All required documents are taken into consideration and must be submitted by the February 1st deadline.

Admission Scoring Criteria

- Students are admitted to the OTA program only in the fall semester and enrollment is limited to 32 students each year. Admission is determined by a total application score obtained by adding points given for general education courses completed (maximum of 30 points) that are required in the degree, and for points received by completing a Self-Assessment Essay (maximum of 60 points). The highest total score that any applicant can attain is 95 points. Those applicants with the 32 highest total scores will be invited for admission to the program, while applicants with the next six highest scores will be placed on a waiting list. If any of the accepted applicants decline admission, the applicant next on the waiting list will be invited for admission. Any applicant must score 45 or more total points to be considered for admission, no matter the size of the pool of applicants.

Paralegal Studies (ABA approved)

- High school diploma or GED.
- Submission of high school transcript or GED or a transcript from a post-secondary school. High school seniors who wish to participate in early admission should supply a transcript after high school graduation.
- Transfer credits for any course that has a PLG prefix will be accepted from American Bar Association (ABA)-approved programs only. The student must have earned at least a “C” for the course to be considered for transfer credit. Transfer credit for courses with a PLG prefix are limited to a total of nine credits. PLG 200 will not be accepted for transfer from another institution.
- Credit for assessment for courses with a PLG prefix are limited to a total of three credits.
- The combined number of transfer credit and credit by assessment for PLG-prefix courses is limited to nine.
- Any student who has successfully completed, with at least a “C,” any PLG course or equivalent at LCCC or another ABA-approved college more than seven years before admission or readmission will be required to repeat these courses.
- Paralegal Studies students are responsible for locating and selecting internship placement sites. Students are responsible for presenting credential levels required by the internship site. It is the sole discretion of the internship site and future employers as to what level of credentialing is required by the position roles. Students who possess a “record” status may experience limitations in available internship placements and future employment in the paralegal field.

Paralegal Studies Certificate (ABA approved)

- Admission to the certificate program is limited to students who currently possess 30 semester hours of college credit, with grades of at least “C” for each course, of which 18 credits is distributed in English, Math/Science and Humanities/Social Science. The courses must be liberal arts credits and not technical. Admission is conditional upon review of these general education college credits.
- Transfer credits for any course that has a PLG prefix will be accepted from ABA-approved programs only. The student must have obtained at least a “C” for the course to be considered for transfer credit. Transfer credit for courses with a PLG prefix are limited to a total of nine credits. PLG 200 will not be accepted for transfer from another institution.
- Credit for assessment for courses with a PLG prefix are limited to a total of three credits.
- The combined number of transfer credit and credit by assessment for PLG-prefix courses is limited to nine.
- Any student who has successfully completed, with at least a “C,” any PLG course or equivalent at LCCC or another ABA-approved college more than seven years before admission or readmission will be required to repeat these courses.
- If you elect an internship, Paralegal Studies students are responsible for locating and selecting internship placement sites. Students are responsible for presenting credential levels required by the internship site. It is the sole discretion of the internship site and future

employers as to what level of credentialing is required by the position roles. Students who possess a “record” status may experience limitations in available internship placements and future employment in the paralegal field.

Physical Therapist Assistant

Additional admission information and requirements for the Physical Therapist Assistant (PTA) program are as follows:

- Admission into the Physical Therapist Assistant program is competitive. Meeting the minimum requirements does not guarantee admission into the program.
- High school diploma or GED and successful completion of appropriate high school or post-secondary courses.
- Submission of high school transcript, GED and transcripts from ALL post-secondary institutions attended.
- A GPA of 2.5, while a GPA of 3.0 or better is preferred.
- One year of high school or college algebra with at least a “B” grade.
- Acceptable scores on LCCC skills assessment.
- Demonstrated knowledge of the field and the role of the physical therapist assistant gained by observation of physical therapy departments is highly recommended prior to the personal interview. Personal interest and a personal orientation to physical therapy will be factors used in determining admission.
- The above elements need to be completed and received by February 1 for admission beginning in the fall of the following academic year.
- A personal interview with the PTA Program Admissions Committee.
- Special program costs include health examination and immunizations, healthcare insurance, malpractice insurance, uniforms, books, supplies, The Pennsylvania State Police Criminal Record Check, child abuse clearance, FBI Background Check Transmittal Form, drug screening, Health Care Provider CPR Certification, transportation to fieldwork agencies, CastleBranch fees, and annual membership in the American Physical Therapy Association and the Pennsylvania Physical Therapy Association.
- To participate in the required clinical experiences, a “no record” status must be reported on the Pennsylvania Child Abuse History Clearance. The Pennsylvania State Police Criminal Record Check, the FBI Background Check Transmittal Form, and a drug screening must be completed and results must fall within the guidelines of the law, as set forth by the Commonwealth of Pennsylvania. Admission to the program may be revoked upon receipt of these results. In addition, health care agencies for clinical experiences have specific health requirements that must be met by each student before attending.
- Any student who has successfully completed, with at least a “C,” Anatomy and Physiology I and II (BIO 163 and 164) or equivalent at another college more than five years before admission or readmission will be required to repeat these courses.
- If transferring credits from another college/university, transfer credits must be at least a “C” (2.0) or greater to meet the PTA program academic standards.

Practical Nursing Certificate

- High school diploma or GED and successful completion of appropriate high school or post-secondary courses. Submission of official transcripts of all previous education (high school, trade, technical, college).
- Acceptable scores on LCCC skills assessment.
- Completion of the Test of Essential Academic Skills (TEAS). The fee for the examination is the student's responsibility. (www.atitest.com)
- Completion of an application for program admission. Admission is competitive based upon the TEAS score, previous academic achievement and complete program application.
- To participate in required clinical experiences a "no record" status must be reported on the Pennsylvania Child Abuse History Clearance. The Pennsylvania State Police Criminal Record Check results must fall within the guidelines of the law, as set forth by the Commonwealth of Pennsylvania. An FBI Background Check Transmittal Form is required. Admission to the program may be revoked upon receipt of these results.
- The Pennsylvania State Board of Nursing and healthcare agencies for clinical experiences have specific health requirements that must be met by each student before participating at the clinical agency.
- Anatomy and Physiology I and II (BIO 163 and 164) must be taken less than seven years before enrollment in the first nursing course.
- An advanced standing option is available for NUR 106 for CNAs and other healthcare providers who qualify. Applicants with previous practical nursing education are ineligible for advanced standing beyond Nursing I (NUR 106).
- The deadline for submission of the application for admission and completion of the TEAS is February 1 for admission to the nursing class beginning in fall.
- Completion of a high school algebra course with a "C" (or better) or completion of MAT 101, Beginning Algebra, with a grade of "C" (or better).

Professional Pilot

- High school diploma or GED and successful completion of appropriate high school or post-secondary courses.
- Personal interview.
- Acceptable scores on LCCC skills assessment. (Students required to be enrolled in basic skills courses or developmental courses numbered 099 and 100 may not enroll in flight practical courses.)
- FAA second class medical certificate is required; first class medical certificate is encouraged.
- If a prospective student pilot with a disqualifying condition is unable to obtain the required medical certificate from the FAA medical examiner s/he will not be able to enroll in the flight courses.

Respiratory Care

In cooperation with Reading Area Community College

Applicants must:

- Declare Respiratory Care as their major and meet with the Respiratory Care Program Director for an interview to discuss the academic and clinical requirements of the program and to be informed of the criteria for admission and continued enrollment in the Respiratory Care courses. The interview is mandatory and must be completed prior to April 15 of the intended year the student wishes to enter clinical courses.
- Attain a grade of "C" (2.0) or higher in all courses required within the Respiratory Care program of study and maintain a cumulative G.P.A. of 2.5 or higher in all college courses. This rule applies to courses taken at the College as well as any required courses transferred into the College from other institutions. It is the student's responsibility to request transcripts be sent to the College from outside institutions in time for evaluation of the transcripts by April 15 of the intended year the student wishes to enter clinical courses.
- Submit a Letter of Intent to enter the clinical courses, identified by the "RES" course designator, to the Respiratory Care Program Director by April 15 prior to the intended Fall semester. Information on the required content of the letter can be obtained from the Program Director.
- Have a medical examination certifying the student is physically fit as per the Health Professions Division format.
- Be currently certified for cardiopulmonary resuscitation by either the American Heart Association for Health Care Providers course, or American Red Cross Professional Rescuer course.
- Submit evidence of a negative drug panel, a Child Abuse clearance, a state Criminal Background clearance and an FBI finger-printed Criminal Background clearance. Students should consult the Program Director before applying for any of the items listed.
- Submit evidence of required up-to-date immunizations and/or of antibody titers as required by the approved health form.
- Submit evidence of current health insurance.
- Attend a mandatory orientation meeting on the assigned date and time after being selected for a Fall semester clinical cohort. Absence from this orientation meeting will result in the student forfeiting their seat in the clinical cohort unless permission or approval is obtained from the Respiratory Care Program Director or a higher level academic administrator.
- No course in the Respiratory Care curriculum, or which is a prerequisite for a course in the curriculum, can be repeated more than once. This requirement includes any courses taken at RACC or at another institution. It also includes courses from which the student may have withdrawn or in which the student earned less than a "C" grade.
- No more than 12 credits of the Respiratory Care curriculum may be repeated. This includes courses taken at RACC and at other institutions. It also includes withdrawals or courses in which the student earned less than a "C" grade.

- Successful completion of Anatomy and Physiology courses may not be older than five years. An exception of this requirement is evidence of advanced, related study at the junior level or higher that is less than five years old and for which the passing of Anatomy and Physiology was a pre-requisite.
- Course repeats or withdrawals that are older than ten years may be excluded from consideration in the admissions process at the discretion of the program head.

Veterinary Technician

Before Admission:

- High school diploma or GED and successful completion of appropriate high school or post-secondary courses.
- Completion of high school laboratory biology with a “B” or better, and high school algebra 1 and 2 with grades of a “C” or better. Fundamentals of Biology (BIO 105) is highly recommended if a college-level biology course has not been previously completed.
- Submission of high school transcript or copy of GED and transcripts from all post-secondary institutions attended.
- Acceptable scores on the LCCC skills assessment (English, Math and Biology). Any remediation must be completed before starting the program.
- A minimum GPA of 2.5.
- Knowledge of field gained through experience with animals strongly recommended.
- Selected students will participate in a personal interview with program representative. The college will contact the student to schedule an interview. At the time of the interview, the student must have completed a minimum of 20 hours of observation in a veterinary facility. The form for this observation can be printed by going to LCCC’s home page, clicking on Academics; Veterinary Technician.
- Admission into the Veterinary Technician program is competitive. Meeting the minimum requirements does not guarantee admission into the program. Only the most qualified applicants are interviewed; the college will contact students to schedule interviews when appropriate.

After Admission:

- Medical Forms: physical examination
- Proof of current health insurance
- Rabies pre-exposure vaccine.

Services for Non-Native Speakers of English

English as a Second Language

A complete English as a Second Language (ESL) program is available for students who are non-native speakers of English.

Three levels of credit classes of ESL reading, writing and speaking are offered at the intermediate level or higher. Accent reduction classes are also available. All students are given a placement test and advised to register for appropriate courses.

Students interested in taking the test should go to the Admissions Office at the main campus or the Donley Center in Allentown and fill out an ESL information form. Students will be called to schedule testing appointments after review of their information form.

To learn more about the ESL program or to make an appointment for testing, students should call 610-799-1504 or 610-799-1006.

ESL courses may be taken as free elective credits up to a limit of 12 credits.

ESL Testing

Demonstration of English language proficiency is required of all applicants for whom English is a second language. Applicants who cannot demonstrate such proficiency should enroll in the ESL program.

- a. Students who are not proficient in the English language must take the ESL placement test.
- b. Students who test into ENG 99 or ENG 100 who are non-native speakers of English should take the ESL placement test.

Honors Opportunities

The Honors options are designed to provide more rigorous educational experiences for students that will challenge them intellectually and personally in the context of understanding both their local communities and the global community. Student benefits include:

- creative learning environments,
- mentoring relationships with faculty,
- leadership and community service opportunities.

There are three ways to participate in Honors at LCCC:

- Honors Scholars Program
- College Honors Program
- Honors Projects and Courses.

These programs are designed as an enhancement and enrichment to a student’s chosen curriculum. Students participating in these programs will be prepared to complete academic challenges with a higher set of skills and abilities. In addition, these successes will assist the student in developing self-confidence, better communication skills and prepare them to be leaders to the community and beyond.

Honors Scholars Program

The Honors Scholars Program is a competitive scholarship program open to new, full-time students who plan to transfer to a four-year college. Students may apply for the Liberal Arts or Science, Engineering, Math (SEM) track. Students accepted into the program take five courses as a cohort during their first year. Students must maintain a 3.0 cumulative GPA and complete four additional Honors courses in their second year.

Eligibility criteria and application materials can be found on the college website.

College Honors Program

The College Honors Program is open to students in all degree programs who have a cumulative 3.0 GPA. To participate in the program students must submit a Letter of Intent (available on the college website) to the Advising Office prior to their last semester.

Students who complete a minimum of five honors courses (either honors projects or honors sections) with grades of “B” or better and have a 3.0 cumulative GPA will graduate from the College Honors Program.

See page 53 for Honors Projects and Sections.

Finance



Allentown | Jim Thorpe | Schnecksville | Tamaqua | LVI Airport
Baum School of Art | Online

Start Here | Go Anywhere

Tuition and Fees

TUITION AND FEES ARE ESTABLISHED BY THE BOARD OF TRUSTEES. TUITION AND FEES LISTED ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Tuition and certain fees are based on school district and Pennsylvania residency. The college is sponsored by the nine school districts in Lehigh County and four of the five school districts in Carbon County: Allentown, Catasauqua, East Penn, Northern Lehigh, Northwestern Lehigh, Parkland, Salisbury, Southern Lehigh, Whitehall-Coplay, Jim Thorpe, Lehigh, Palmerton and Panther Valley.

As part of the application process, students provide the college with residency information. Each school district is responsible for determining whether students are residents of the district and whether to sponsor them resident tuition. Residency requirements vary among the sponsoring school districts. Students should be familiar with the residency requirements of their school district.

For information concerning residency requirements, contact the Business Office at 610-799-1157.

Tuition and Basic Fees

(Refundable in accordance with the College Refund Policy)

A. Resident of Sponsoring School District*

Full-Time Tuition (12–18 credits per semester)	\$1,500
Comprehensive Fee	\$ 360
Technology Fee	\$ 180
Total Full-Time Tuition and Fees	\$2,040
Part-Time Tuition (1–11 credits per semester) and credits in excess of 18 per semester	\$ 100 per credit
Comprehensive Fee	\$ 24 per credit
Technology Fee	\$ 22 per credit
Total Part-Time Tuition and Fees	\$ 146 per credit

B. Resident of Nonsponsoring School District**

Full-Time Tuition (12–18 credits per semester)	\$3,000
Capital Outlay Fee	\$ 135
Comprehensive Fee	\$ 360
Technology Fee	\$ 180
Total Full-Time Tuition and Fees	\$3,675
Part-Time Tuition (1–11 credits per semester) and credits in excess of 18 per semester	\$ 200 per credit
Capital Outlay Fee	\$ 9 per credit
Comprehensive Fee	\$ 24 per credit
Technology Fee	\$ 22 per credit
Total Part-Time Tuition and Fees	\$ 255 per credit

C. Nonresident of Pennsylvania/International Student

Full-Time Tuition (12–18 credits per semester)	\$4,500
Capital Outlay Fee	\$ 270
Comprehensive Fee	\$ 360
Technology Fee	\$ 180
Total Full-Time Tuition and Fees	\$5,310
Part-Time Tuition (1–11 credits per semester) and credits in excess of 18 per semester	\$ 300 per credit
Capital Outlay Fee	\$ 18 per credit
Comprehensive Fee	\$ 24 per credit
Technology Fee	\$ 22 per credit
Total Part-Time Tuition and Fees	\$ 364 per credit

D. Resident of Schuylkill County

Full-Time Tuition (12–18 credits per semester)	\$2,250
Capital Outlay Fee	\$ 135
Comprehensive Fee	\$ 360
Technology Fee	\$ 180
Total Full-Time Tuition and Fees	\$2,925
Part-Time Tuition (1–11 credits per semester) and credits in excess of 18 per semester	\$ 150 per credit
Capital Outlay Fee	\$ 9 per credit
Comprehensive Fee	\$ 24 per credit
Technology Fee	\$ 22 per credit
Total Part-Time Tuition and Fees	\$ 205 per credit

* Veterans and military students will be charged sponsored rates.

** Tamaqua Area High School and Marian Catholic High School graduates will be charged sponsor rates.

E. Dual Enrollment

Dual Enrollment (sponsored school districts)	
Courses taught by sponsor instructor	\$ 30 per credit
Courses taught by college instructor	\$ 55 per credit
Dual Enrollment (nonsponsored school districts)	
All courses	\$ 96 per credit
Tamaqua Area High School and Marian Catholic High School students will be charged sponsor rates.	

Senior Citizen Tuition and Fees

Students over the age of 60 years residing in college-sponsored school districts are eligible for free tuition in a credit course on a space available basis as of the day the course begins. Senior citizen students will pay all course fees or costs such as laboratory fees and out-of-pocket course costs incurred and paid for by the college such as for third party services, including, but not limited to, truck driving certifications and courses offered by the Baum School of Art.

Course Fees

Prior Learning Assessment Fee	\$ 125
CIS 105 Online Resources	
Challenge Exam	\$ 15
Tutoring Fee (ENG 099, 100)	\$ 5

Additional fees will apply to other select classes. Course fees are established to recover the costs directly associated with a particular course. Course fees will be assessed in the following classes:

Art Program

ART-CIS 109, 128, 132, 226, 246, 247, 248, 249, 251, 258	\$ 20
ART 260 (Independent Study)	\$ 20
ART 260 (Photography, Jewelry, Ceramics, Metal-smithing, CG)	\$ 50
ART 112, 125, 130, 135, 155, 205, 206, 225, 230	\$ 40
ART 120, 140, 220, 235, 240	\$ 55

Aviation Program

ASA 111, 112, 121, 122, 211, 212, 221, 230, 231	\$ 100
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See page 24 for Aviation Lab Fees

Culinary Arts Program

CUL 105, 115, 120, 125, 130, 231, 235, 250	\$ 140
Program Equipment Fee (one-time fee)	\$ 375

<u>Criminal Justice Program</u>	
CJA 215 (Lab Fee)	\$ 15
<u>Early Childhood Education Program</u>	
ECE 110, 120, 130, 140, 210, 215, 220, 225	\$ 30
ECI 115, 230, 240	\$ 30
<u>Math Class Digital Book Fees</u>	
MAT 090	\$ 125
<u>Medical Assistant Program</u>	
MED 104 (Supply kit)	\$ 75
MED 205, 206 (Approximate cost for Exam, CPR, Physical, Insurance, Uniform, Background check)	\$ 700
CMA Exam	\$ 125
AAMA Student Membership	\$ 37
<u>Nursing Programs</u>	
<u>ADN Program</u>	
National Student Nurse Assn. (NSNA) Fee (one-time fee)	\$ 40/70
For ATI Standardized Exams and Resources	
ADN 150	\$ 525
ADN 160	\$ 525
ADN 173	\$ 525
ADN 205/ADN 215	\$ 525
ADN 225/ADN 235	\$ 525
ADN 245	\$ 525
<u>LPN Program</u>	
For ATI Standardized Exams and Resources	
NUR 106	\$ 535
NUR 116	\$ 535
NUR 126	\$ 535
<u>Physical Therapist Assistant Program</u>	
FSBT PEAT	\$ 85
<u>SEED Program</u>	
Fees will range from \$3,000 to \$6,500 depending on the number of students in the program and the grants received.	
<u>Veterinary Technician Program</u>	
VET 101, 120, 125, 220, 228	\$ 15
VET 210	\$ 85
VET 225	\$ 50
VET 230	\$ 70
Vet Tech Badge Fee	\$ 40

Additional fees will apply to all students in the Veterinary Technician program. The fee will be established to equalize joint program costs with Northampton Community College.

Other Fees (Non-Refundable)

Bad Check Fee	\$ 30
Cougar Payment Plan Fee	\$ 25/\$30
Cougar Payment Plan Late Fee	\$ 25
ID Replacement Fee	\$ 5
Late Registration Fee	\$ 5
Proctored Test Fee*	Varies

*(This fee is part of the schedule set by the Board of Trustees.)

Collection Process

In an effort to keep the tuition cost down, Lehigh Carbon Community College utilizes a standard collection process, including any collection costs and/or attorney fees for unpaid indebtedness to the college.

In addition, student transcripts are withheld and the college will deny registration and readmission to students who:

- Are indebted to the college.
- Have failed to return books or equipment loaned to them.

Tuition Financial Obligation

College Refund Policy

Tuition is based upon liable credit hours. The refund period is equal to 1/15 of a scheduled class. The information that follows details the financial obligation of the student based on what refund period the class withdrawal occurs.

- Before and during the first refund period of classes - 0% credit hour liability (no tuition is owed)
- Within the second refund period of classes - 50% credit hours liability (must pay 50% of tuition charge)
- Within the third refund period of classes - 75% credit hour liability (must pay 75% of tuition charge)
- After third week of regularly scheduled classes - 100% credit hour liability (must pay all tuition charges)

Fee Refunds

Please refer to academic calendar for semester start dates.

- Before the start of the semester - 100% refundable
- Within the first refund period of classes - 100% refundable, less a \$100 service fee.
- Within the second refund period of classes - 50% fee liability (must pay 50% of fees charged)
- Within the third refund period of classes - 75% fee liability (must pay 75% of fees charged)
- After third week of regularly scheduled classes - 100% fee liability (must pay all fees charged)

Actual refund period (liability) dates are listed on the college website: www.lccc.edu. For specific refund periods for classes that start other than the first week of class or classes that are not the full semester in duration, contact Registration/Student Records at 610-799-1171.

The date of official withdrawal is the date when the properly completed forms are in the possession of the Office of Registration/Student Records.

In the event the college cancels the class for lack of sufficient enrollment or the college cancelled the student's registration prior to the start of classes, all tuition and fees listed under letters A through D of the Tuition and Fees section, and course fees will be refunded.

Aviation program students receiving V/A benefits will not be refunded any monies paid by the V/A toward their tuition and fees or flight costs.

Payment received from any other source will be subject to the refund policy of that organization.

Cougar Payment Plan

An enrollment fee of \$25/\$30 per semester provides students with the option to stretch tuition payments from three-to-four installments: three installments for the spring and summer semesters, four installments for the fall semester. To enroll in the Cougar Payment plan go to "myLCCC," then click on "Connect to BannerWeb," next click on the "Student" tab at the top of the page. Finally, click on the "Credit Card/ACH Payment/Cougar Payment Plan" link.

Flight Operations - Lab Fees

Private Pilot Certificate Program

ASA 112	Hours Required	Hourly Rate	Total Cost
Dual Instruction (aircraft)	30.0 hours	\$215.00	\$6,450.00
Solo (aircraft)	12.0 hours	\$165.00	\$1,980.00
Instruction (brief/de-brief)	10.5 hours	\$50.00	\$525.00
Checkride (aircraft)	2.0 hours	\$165.00	\$330.00
ASA 112 Lab Fee:			\$9,285.00

Instrument Rating Program

ASA 122	Hours Required	Hourly Rate	Total Cost
Dual Instruction (aircraft)	42.0 hours	\$215.00	\$9,030.00
Instruction (brief/de-brief)	10.5 hours	\$50.00	\$525.00
Checkride (aircraft)	2.0 hours	\$165.00	\$330.00
ASA 122 Lab Fee:			\$9,885.00

Commercial Pilot Certificate Program

ASA 212	Hours Required	Hourly Rate	Total Cost
Dual Instruction (aircraft)	13.0 hours	\$215.00	\$2,795.00
Solo (aircraft)	40.0 hours	\$165.00	\$6,600.00
Instruction (brief/de-brief)	10.0 hours	\$50.00	\$500.00
ASA 212 Lab Fee:			\$9,895.00

ASA 214	Hours Required	Hourly Rate	Total Cost
Dual Instruction (aircraft)	17.0 hours	\$215.00	\$3,655.00
Dual Instruction (complex)	10.0 hours	\$280.00	\$2,800.00
Dual Instruction (multi-engine)	15.0 hours	\$380.00	\$5,700.00
Solo (aircraft)	25.0 hours	\$165.00	\$4,125.00
Instruction (brief/de-brief)	10.0 hours	\$50.00	\$500.00
Checkride (SE aircraft)	1.5 hours	\$165.00	\$247.50
Checkride (ME aircraft)	1.0 hours	\$300.00	\$300.00
ASA 214 Lab Fee:			\$17,327.50

Certificated Flight Instructor Program

ASA 231	Hours Required	Hourly Rate	Total Cost
Dual Instruction (aircraft)	25.0 hours	\$215.00	\$5,375.00
Instruction (brief/de-brief)	6.0 hours	\$50.00	\$300.00
Checkride	2.0 hours	\$165.00	\$330.00
ASA 231 Lab Fee:			\$6,005.00

Financial Aid

Definition of an Academic Year

An academic calendar year is defined as the fall semester and the spring semester. For full-time students receiving all forms of financial aid, the academic year includes a minimum of 24 credits, with 14 weeks of instruction and one week of final examinations each semester. There are several shorter parts-of-term within the regular semester that contain the same number of instructional hours as a full semester. The college offers summer semesters including one 10-week session and two five-week sessions.

College Code

The federal college code for Lehigh Carbon Community College is 006810.

Code of Conduct

1. The institution will not enter into any revenue-sharing arrangement with any lender.
2. No officer or employee of the institution who is employed in the financial aid office of the institution or who otherwise has responsibilities with respect to education loans, or agent who has responsibilities with respect to education loans, will solicit or accept any gift from a lender, guarantor or servicer of education loans.
3. An officer or employee who is employed in the financial aid office of the institution or who otherwise has responsibilities with respect to education loans, or any agent who has responsibilities with respect to education loans, will not accept from any lender or affiliate of any lender any fee, payment or other financial benefit (including the opportunity to purchase stock) as compensation for any type of consulting arrangement or other contract to provide services to a lender or on behalf of a lender relating to education loans.
4. The institution shall not request or accept from any lender any offer of funds to be used for private education loans (as defined in section 140 of the Truth in Lending Act) including funds for an opportunity pool loan, to students in exchange for the institution providing concessions or promises regarding providing the lender with
 - a. a specified number of loans made, insured or guaranteed under this title;
 - b. a specified loan volume of such loans; or
 - c. a preferred lender arrangement for such loans.
5. The institution will not request or accept from any lender any assistance with call center staffing or financial aid office staffing.
6. Any employee who is employed in the financial aid office of the institution, or who otherwise has responsibilities with respect to education loans or other student financial aid of the institution, and who serves on an advisory board, commission or group established by a lender, guarantor or group of lenders or guarantors, shall be prohibited from receiving anything of value from the lender, guarantor or group of lenders or guarantors, except that the employee may be reimbursed for reasonable expenses incurred in servicing on such advisory board, commission or group.

Financial Aid Requirements

To assist qualified degree-seeking students with meeting the cost of education, Lehigh Carbon Community College administers various federal, state and institutional financial aid funds. Grants and scholarships, which do not require repayment, as well as loans and student employment programs, are available through the Office of Financial Aid. Financial aid is intended to supplement the financial resources of the student and his or her family.

To be eligible for financial aid, the student must:

- be enrolled as a matriculated student in an eligible program of study, for example seeking a degree/certificate;
- be a U.S. citizen or an eligible non-citizen;
- have a high school diploma or its equivalent;
- not be in default on any Title IV loan or owe repayment on any Title IV grant;
- not exceed annual or aggregate loan limits in Title IV programs;
- agree to use any Title IV aid received solely for educational purposes;
- not be a prisoner in a state or federal facility;
- be registered with Selective Service if required to register;
- have a valid Social Security number; and
- maintain satisfactory academic progress.

To qualify for financial aid, the Free Application for Federal Student Aid (FAFSA) must be completed online at www.fafsa.ed.gov. New applicants and one parent (applicable if the student is a dependent student) must create a FSA ID at fsaid.ed.gov in order to log into certain U.S. Department of Education websites and electronically sign the Free Application for Federal Student Aid (FAFSA). Create a FSA ID as soon as possible and at least 3 days BEFORE filing the FAFSA. You are able to immediately use your FSA ID to sign an original FAFSA. Once the Social Security Administration verifies your information in 1-3 days, you will be able to make changes to an existing FAFSA and log into U.S. Department of Education websites. Continuing students who wish to reapply for financial aid must also create a FSA ID if they have not already done so at fsaid.ed.gov. Once the Social Security Administration verifies your information in 1-3 days, you will be able to start a renewal FAFSA. Students should complete the FAFSA by the preceding May 1 for attendance during the fall and spring semesters, by the preceding October 1 for attendance during the spring semester and by the preceding March 1 for attendance during the summer semester. Students will receive an email notification that his/her Student Aid Report (SAR) results are available online as long as the student provided a valid email address when the FAFSA was filed. The student will receive a SAR acknowledgement by U.S. mail if he/she did not provide an email address or provided an invalid email address. The SAR is a recap of the information submitted on the original FAFSA form. Comments found in Part 1 of the SAR should be read carefully. If the application has been selected for verification, it will be noted in Part 1 of the SAR.

Verification

After students submit the FAFSA to the federal processor, their record may be randomly selected for a process called verification. A school must verify all applications selected by the federal processor. LCCC is required to collect and verify the following information from those applicants whose applications were selected for verification:

- Household size
- Number in college
- Adjusted gross income (AGI)
- U.S. taxes paid
- Certain types of untaxed income and benefits such as education tax credits, child support paid, need-based employment, combat pay, tax-deferred pensions, IRA and Keogh deductions, child support received, tax exempt interest, untaxed IRA distributions, untaxed pensions, military and clergy allowance, VA non-education benefits, food stamps and other untaxed income and other non-reported money.

The documents required to complete the verification process are: Parent and student current year tax transcript from the IRS, and dependent or independent verification form (which is available on LCCC's website under Financial Aid, Deadline, Codes and Forms). The verification form must be printed, completed and signed and submitted to the Office of Financial Aid.

Other documents as required based on the results of filing the FAFSA.

An application selected for verification cannot be finalized until all documentation is received and the verification process is complete. The student must respond to the Office of Financial Aid's request for verification documentation in ten days. The verification process should take approximately four weeks before the student is informed of his/her financial aid eligibility.

Federal Student Aid Penalties for Drug Convictions

The Higher Education Opportunity Act (HEOA) requires all institutions of higher education to notify all students about the penalties associated with drug-related offenses. Students will lose their eligibility for federal student aid if convicted of possession and/or sale of illegal drugs for offenses that occurred during a period of enrollment for which the student was receiving federal student aid. **Note:** Drug-related convictions for illegal activity that occurred during a time in which the student did NOT receive federal financial aid, will NOT result in loss of eligibility. In addition, a conviction that was reversed, set aside, or removed from the student's criminal record will NOT result in loss of eligibility, nor does a juvenile offense, unless the individual was tried as an adult.

The chart below illustrates the period of ineligibility for Federal Student Aid funds, as per type of the conviction and number of offenses. A conviction for sale of drugs includes convictions for conspiring to sell drugs.

Possession of illegal drugs	Sale of illegal drugs
<ul style="list-style-type: none"> • 1st offense: 1 year from date of conviction • 2nd offense: 2 years from date of conviction • 3+ offenses: 	<ul style="list-style-type: none"> 2 years from date of conviction Indefinite period Indefinite period

If the student was convicted both of possession and sale of illegal drugs, and the periods of ineligibility are different, the student will be ineligible for the longer period.

A student regains eligibility the day after the period of ineligibility ends or when he/she has successfully completed a qualified drug rehabilitation program. Further drug convictions will make the student ineligible again.

Students denied eligibility for an indefinite period can regain eligibility only after successfully completing a rehabilitation program; or if a conviction is reversed, set aside or removed from the student's criminal record so that fewer than two convictions for sale or three convictions for possession remain, in which case the timelines as indicated in the above chart apply.

Financial Aid Eligibility and Bannerweb

All awards are determined and finalized by the Office of Financial Aid. Only students who are registered in classes at Lehigh Carbon Community College will receive a financial aid award. Students are able to view their award eligibility by logging into "myLCCC" portal on the LCCC web page at www.lccc.edu using their L number and password. Locate "Connect to BannerWeb" from the QuickLaunch pad on the left hand side. Locate "Financial Aid" and click. Select "Award" and click. Select "Award by Aid Year" and click and then select the appropriate aid year (for example: 2018-2019 academic year) and submit. Select the Resources/Additional Information tab and answer the questions Yes or No. Select the "Accept by Aid Year" tab. If LCCC needs documents or information from the student, they will be listed here. Once your financial file is complete a listing of fund types and dollar amount are listed here. Loans are listed as estimated and a decision will need to be made to accept or decline any loans offered to the student. New requirements will appear once loans are accepted.

Financial Aid Communications

New students to LCCC after submitting an application for admission can expect to receive within 48 hours a LCCC ID number and an LCCC email account. LCCC email accounts are available for all registered and admitted students.

The College assigned student email account shall be Lehigh Carbon Community College's official means of communication with all LCCC students who receive financial aid. The College reserves the right to send official communications to students by email with the full expectation that students will receive and read these emails in a timely manner.

The emails will direct students to the financial aid section on the LCCC portal from MY LCCC's home page (www.lccc.edu). Please see Financial Aid Eligibility and Bannerweb above for additional instructions.

Students are expected to check their LCCC email account on a frequent and consistent basis in order to stay current with their financial aid status.

Please note that students have the responsibility to recognize that financial aid email communications are time sensitive and may require immediate action by the student. Students who choose to forward their LCCC email account to a private unofficial email address outside of

the official College email address do so at their own risk. The College is not responsible for any difficulties that may occur in the proper or timely transmission or access of email forwarded to any unofficial email address. LCCC is not responsible for lost or deleted email due to account closures or storage restrictions.

Upon request, students are entitled to a paper copy by contacting the financial aid office at (610) 799 1133 or by sending a written request to Office of Financial Aid, Lehigh Carbon Community College, 4525 Education Park Drive, Schnecksville PA 18078

Financial Aid Academic Progress Policy

Federal regulations require that students maintain satisfactory academic progress to be eligible for financial aid. A student's academic transcript will be reviewed at the end of every two semesters or one-half the published length of a program less than two academic years in length. The entire official academic transcript, including all transfer credits as well as credits that appear even though the student was granted academic restart, will be reviewed even if the student was not a financial aid recipient. Permission to enroll does not equal financial aid satisfactory academic progress. Any classes taken during any summer session (within the same summer) are viewed as one enrolled term. Only credit courses are considered for satisfactory academic progress evaluation.

Satisfactory academic progress is measured on:

1. The maximum length of time for which a student may receive financial aid.
2. The number of credit hours successfully completed including transfer credits or credits that appear on the official academic transcript even if the student was granted academic restart divided by the number of credit hours attempted.
3. The minimum cumulative GPA a student must maintain based on the credits successfully completed. (The minimum cumulative GPA does not include transfer credits.)

Maximum Length of Time

Federal regulations indicate that a student may receive financial aid for no longer than 150% of the published length of his/her educational program. For example, for programs requiring 60 credits, the maximum time frame is the equivalent of six full-time semesters or 90 attempted credits. A student will not receive financial aid after having attempted 90 credits (including transfer credits or credits appearing on an official academic transcript as a result of academic restart). For programs requiring 30 credits, the maximum time frame is 45 attempted credits. A student will not receive financial aid after having attempted 45 credits (including transfer credits or credits appearing on an official academic transcript as a result of academic restart). **Students who have changed majors and who are seeking additional degrees are limited to additional financial aid up to a total of 90 attempted credits for an associate degree and 45 attempted credits for a certificate program regardless of the number of credits required to complete the additional degree or certificate.**

Percentage of Credit Hours Successfully Completed Divided by the Number of Credit Hours Attempted

Credit hours attempted are the sum of all LCCC credit hours for which tuition was charged, whether or not financial aid was received, plus all transfer hours accepted for credit as well as all credit hours appearing on an official academic transcript for which the student was granted academic restart. If a student changes course of study, the credit hours attempted under all courses of study are included in the calculation of attempted and earned credit hours. A student is required to earn 67% of all credits attempted as described above. This quantitative standard is the percentage calculated as "number of credit hours earned" divided by "number of credit hours attempted." Remedial credits are not counted as attempted or earned credits. Developmental English (ENG 100) is counted in attempted credits with the final grade received ("R" or "Z") counted as an earned grade. Audited classes ("L") are never eligible for financial aid assistance.

Minimum Cumulative GPA

A student must attain the following cumulative grade point average:

Earned Credit Hours	GPA
1–20	1.00
21–30	1.50
31–54	1.75
55+	2.00

- Some LCCC programs have additional or more stringent satisfactory academic progress policies.
- A student on academic suspension or enrolled in the Alternative to Academic Suspension or Dismissal Program may not receive financial aid.
- A student may receive financial aid for a previously passed course only once.
- A student who enrolled in a course and passed it, then enrolled in the class again and failed it, is not eligible again for financial aid for that class.
- A student may not receive financial aid for classes not required by his/her major.
- A student may receive federal financial aid for no more than 30 remedial credits.
- Transfer credits accepted from other schools are counted towards completion of the student's program as both attempted and completed hours.
- ESL courses are counted as developmental credits up to a limit of 30 credits.
- Students may only receive a financial aid academic appeal once during the time they are attending Lehigh Carbon Community College.
- An incomplete grade that becomes a failing grade may result in a student failing to meet financial aid satisfactory academic progress. See below for additional information about failure to maintain satisfactory academic progress.

Right to Appeal

If a student fails to make satisfactory academic progress, he/she has the opportunity to appeal his/her academic progress to the Office of Financial Aid in writing. Appeal forms are available on the LCCC website. Click on Financial Aid, Deadline Codes & Forms and scroll

down to Financial Aid Appeal. Appeals are considered if the lack of academic progress resulted from death of a relative of the student, an injury or illness of the student, family difficulties, interpersonal problems, difficulty balancing work, family, school, financial, or other special circumstances. Appeals are considered on a case-by-case basis and reviewed by the Office of Financial Aid within 30 days of receipt of the appeal form. The decision or recommendation of the Office of Financial Aid is final. When an appeal is approved, the student's financial aid eligibility will be reinstated with specific conditions for the student to meet to remain eligible for financial aid. If the conditions of the appeal are not met then the appeal becomes void for the next semester and the student is no longer eligible for financial aid. If the initial appeal is denied, the student will remain in an ineligible status and must pay for educational costs.

If the student is denied aid based on his/her academic progress, that denial takes precedence over any previous award notification he/she may have received. Students may only receive a financial aid academic appeal once during the time they are attending Lehigh Carbon Community College.

Reestablishing Satisfactory Progress

A student may reestablish his/her eligibility to receive financial assistance by enrolling at Lehigh Carbon Community College at his/her own expense and completing a sufficient number of courses at a sufficiently high GPA to meet the standards. If you have any questions, please contact the Office of Financial Aid at 610-799-1133.

Financial Aid Credit

All forms of financial aid except college employment or Federal Work Study appear as a credit on a student's account to be used for the payment of tuition and fees. Students whose financial aid awards exceed the direct costs of tuition, fees, books and supplies may receive the excess funds 14 days after the disbursement date of each semester or approximately four weeks after the first day of classes. The student's excess funds will be released after the college certifies eligibility for the funds such as current enrollment or other factors. Funding must be adjusted during this review if a student's enrollment has changed or the student becomes ineligible for the funds because of nonattendance or other factors. The Business Office issues any excess funds to students through Customer Bank's BankMobile Vibe account Debit Master Card 14 days after disbursement to student accounts.

Withdrawal Policy for Students Receiving Financial Aid

The Office of Financial Aid must be notified in writing or orally (if the student is unable to provide a written withdrawal notice) of the student's intent to withdraw. A withdrawal notice is not official until it is received by the Office of Registration/Student Records.

If a student receives any type of financial aid (grants, scholarships and loans) and officially withdraws completely from classes before the tenth week of class (60% of the semester), the student is required to have his/her financial aid prorated based on the U.S. Dept. of Education's Federal Refund Policy. A student who falls

under this criterion will have the appropriate percentage of his financial aid returned to the appropriate fund and is responsible to pay any balance remaining on the account as a result of the calculation. For example, a student who totally withdraws within any of the following time periods, depending on the actual day of withdrawal, must have his/her financial aid prorated using the actual percentage of the amount of financial aid earned and the amount of time the student attended classes. For example: students withdrawing during the:

1. first week of class must have between 90% and 99% of financial aid returned
2. second week of class must have between 80% and 89% of financial aid returned
3. third week of class must have between 79% and 85% of financial aid returned
4. fourth week of class must have between 75% and 80% of financial aid returned
5. fifth week of class must have between 65% and 75% of financial aid returned
6. sixth week of class must have between 60% and 65% of financial aid returned
7. seventh week of class must have between 55% and 60% of financial aid returned
8. eighth week of class must have between 45% and 50% of financial aid returned
9. ninth week of class must have between 40% and 49% of financial aid returned
10. A student withdrawing during the tenth week depending on the exact day of withdrawal will not be subject to a withdrawal calculation and has earned all of his/her financial aid.

Please note that students who withdraw during the refund period must still have his/her financial aid prorated based on the number of weeks spent in class. The reduction of costs as a result of withdrawing during the refund period (week 1, 2 or 3) does not affect the percentage used to prorate financial aid or eliminate any balance that may be owed by the student as a result of withdrawing.

Funds are returned to the Title IV programs in the following order:

- Federal Direct Unsubsidized Loan
- Federal Direct Subsidized Loan
- Federal PLUS Loan
- Federal Pell Grant
- Federal SEOG.

Lehigh Carbon Community College is required to return the amount of Title IV funds for which it is responsible as soon as possible but not later than 45 days after the date of the institution's determination that a student withdrew.

Students who have withdrawn and have borrowed a student loan, will have the amount of the loan which must be canceled as a result of the withdrawal of the student, returned directly to the lender. This return will reduce the principal amount of the loan that was originally borrowed by the student.

Unofficial Withdrawals and Students Failing to Earn a Passing Grade in any of Their Classes as of the End of the Semester

If a student who began attendance and has not officially withdrawn fails to earn a passing grade in at least one of his/her courses, the college must assume that the student has unofficially withdrawn. The college is required by the

U.S. Department of Education to prorate and adjust to the last date of attendance at an academically related activity as reported by the faculty the amount of financial aid the student received for the semester. The student is responsible to pay any balance remaining on his/her account as a result of this adjustment.

Employment

College Employment

Students are asked to complete the financial aid application process to be considered for part-time employment; however, financial need is not a requirement for participation in this employment program. College employment funds are paid directly to the student for hours worked. Earnings may not exceed the amount awarded to the student.

Federal Work-Study Program

The Federal Work-Study Program provides students with an opportunity to earn money during the academic year and during the summer. The Office of Financial Aid awards these federal funds based on financial need and on fund availability. Federal work-study funds are paid directly to the student for hours worked. Earnings may not exceed the amount awarded to the student.

Grants and Scholarships (No Repayment Necessary):

Federal Pell Grant

After completing and submitting the FAFSA, students will receive a Student Aid Report (SAR) with an official Expected Family Contribution (EFC) figure. This figure will determine eligibility for a Federal Pell Grant. Federal Pell Grant amounts are prorated based upon enrollment status. Students may receive 12 semesters worth of full-time Pell grant eligibility.

Federal Supplemental Educational Opportunity Grant (FSEOG)

These grants are awarded by Lehigh Carbon Community College from funds allocated by the federal government. Award amounts will vary based on financial need, the enrollment status of the student, the availability of funds, and Pell grant eligibility.

Lehigh Carbon Community College Foundation Scholarships

The LCCC Foundation provides annual scholarships to many students attending Lehigh Carbon Community College. The LCCC Foundation also awards donor-designated scholarships on an annual basis. A completed and processed Free Application for Federal Student Aid must be on file in the Financial Aid Office in order to be considered for a LCCC Foundation Scholarship.

Lehigh Carbon Community College Morgan Foundation Scholarships

In 2002, the John E. Morgan Charitable Trust II announced that it will fund Morgan Success Scholarships for qualified applicants who have graduated from Tamaqua Area High School. Each year the Morgan Foundation sets aside funds that the Foundation anticipates will be sufficient to cover full tuition scholarships for the number of graduating Tamaqua Area High School seniors who attend LCCC, based upon historic and predicted attendance rates. If the number of graduates who actually attend LCCC materially exceeds expectations during any year, it is possible that funding will be insufficient to provide full scholarships. In that event, all scholarships for that year will be reduced on a pro-rata basis, so that each student will receive the largest scholarship possible.

Applicants must meet the following criteria:

- be a current graduate of Tamaqua Area High School.
- have attended Tamaqua Area High School for no fewer than two academic years immediately prior to graduation.
- apply for admission to LCCC no later than April 1.
- complete the FAFSA form no later than April 1 at www.fafsa.ed.gov and designate LCCC 006810 on the form.
- be a degree-seeking candidate.
- be enrolled in at least nine credit hours for fall and spring semesters.
- not be on academic probation.
- not be related to any trustee of the John E. Morgan Charitable Trust II.
- complete a "Morgan Success Scholarship Application" form (available from the LCCC Admission Office) and submit it with the LCCC application for admission by April 1.

Pennsylvania Higher Education Assistance Agency (PHEAA) Grant

The state grant program awards funds to students who demonstrate financial need according to state criteria, are bona fide residents of Pennsylvania, have not received their first baccalaureate degree in any field, and are enrolled in credit classes for at least six credits per term in an approved two-year degree program of at least 60 credits. Students who received a state grant for attendance at another institution prior to attending LCCC must also provide an academic transcript from the school previously attended to the Office of Financial Aid. Students enrolled in all developmental courses are not eligible for a state grant. Students enrolled in all online or hybrid courses must be nominated by name and his/her name submitted to Pennsylvania Higher Education Assistance Agency in order to be considered for state grant funding.

Academic Progress Policy for Pennsylvania State Grant Recipients Who Remain Enrolled in State Grant-Eligible Programs

Students who have received state grant assistance are required to make satisfactory academic progress for each academic year (fall, spring, and/or summer semester)

during which state grant aid is received, a student must successfully complete the minimum number of credits appropriate to the student enrollment status during the terms for which state grant aid was received. For example, if a student last received state grant aid during the previous academic year and received two full-time semesters of state grant aid, the student must have successfully completed 24 semester credits during or since those two terms in order to be eligible for the next academic year. Likewise, if the student last received state grant aid during the previous academic year and received two half-time semesters of state grant aid, the student must have successfully completed 12 to 22 semester credits during or since those two terms to be eligible for the next academic year. Progress for state grant purposes is checked at the end of each academic year.

Loans (Must be Repaid with Interest):

William D. Ford Federal Direct Loan Program

Students do not borrow funds from banks. The Federal government raises the loan funds through its regular Treasury bill auctions and the federal government is the recipient of loan repayments. Loan types available through this program are Subsidized Loans, Unsubsidized Loans or Plus Loans. Students apply for these loans online at www.StudentLoans.gov.

The different types of loans under these programs are:

Direct Subsidized Loans

The Federal Direct Subsidized Loan program assists students with meeting educational costs by providing low-interest, long-term loans. If the student demonstrates financial need for the loan, the interest is subsidized by the government while the student is enrolled at least half time (six credits per semester) and until a six-month grace period has expired.

Eligibility for a loan is based on the EFC calculated by the FAFSA. Families must demonstrate financial need for the loan according to criteria established by the U.S. Department of Education. Students must complete the FAFSA form at www.fafsa.ed.gov to be considered for a Federal Direct Subsidized Loan.

The subsidized loan amount is limited to demonstrated need up to a maximum of \$3,500 for a dependent first-year undergraduate student (less than 30 credits earned) and \$4,500 for a dependent student who has successfully completed the first year (a minimum of 30 credits) and is in the second year of undergraduate study.

Loan amounts are prorated when a program, or the remaining part of a program, is less than an academic year and when the student's enrollment status is less than full time. The interest rate varies by year.

Repayment commences six months after the month in which the student either graduates or ceases to be enrolled at least half time.

Federal Direct Unsubsidized Loans

Dependent students who do not qualify for the full interest subsidy under the Federal Direct Subsidized Loan program may receive a Federal Direct Unsubsidized Loan. The Federal Direct Unsubsidized Loan differs from the Federal Direct Subsidized Loan in that all the interest on the loan during in-school, grace and deferment periods must be paid by the student.

First year dependent undergraduate students may borrow a maximum of \$5,500 (up to \$3,500 subsidized plus \$2,000 unsubsidized) and second year (over 30 credits successfully completed) dependent undergraduate students may borrow a maximum of \$6,500 (up to \$4,500 subsidized plus \$2,000 unsubsidized). Therefore students who demonstrate need on paper for only part of the annual Federal Direct Subsidized Loan limit may borrow the remainder through the Federal Direct Unsubsidized Loan program.

First year independent undergraduate students may borrow a maximum of \$9,500 (up to \$3,500 subsidized plus \$6,000 unsubsidized) and second year (over 30 credits successfully completed) independent undergraduate students may borrow a maximum of \$10,500 (up to \$4,500 subsidized plus \$6,000 unsubsidized).

The interest rate on the Federal Direct Unsubsidized Loan is variable by year and may be capitalized. Repayment of principal and all capitalized interest commences six months after the month in which the student either graduates or ceases to be enrolled at least half time.

NOTE: No student may borrow in excess of the cost of attendance as calculated by the Office of Financial Aid. Each loan must be disbursed in two equal payments.

Federal PLUS Loans (Parent Loan for Undergraduate Students)

This loan program is for the parents of undergraduate students to help them meet the cost of education. Parents may borrow up to the cost of education minus estimated financial assistance to the student. The interest rate is variable by year. Repayment of the Federal PLUS loan begins 60 days after the last disbursement. Parents are eligible to borrow a Federal PLUS loan only if they have no adverse credit history. Parents complete a PLUS application and promissory note by logging onto www.studentloans.gov.

NOTE: Each loan must be disbursed in two equal payments. No student may borrow in excess of the cost of attendance as calculated by the Office of Financial Aid.

Special Programs

Tax Benefits for Education

Tax benefits may be available to students and their families if they are saving or paying education costs for themselves or another student who is a member of the immediate family. Information is available at www.irs.gov or from a tax preparer.

Additional information about financial aid programs and receiving financial aid at Lehigh Carbon Community College can be found at www.lccc.edu/financialaid.

Registration/ Student Records



Allentown | Jim Thorpe | Schnecksville | Tamaqua | LVI Airport
Baum School of Art | Online

Start Here | Go Anywhere

Academic Calendar

The academic calendar includes a fall semester and a spring semester. These semesters are 14 weeks of instruction and one week of final examinations. There are several parts-of-term within the regular semester that contain the same number of instructional hours as a full semester. The college offers summer semesters which consists of one 10-week session and two five-week sessions.

Academic Load

The course load for full-time students at LCCC is typically 15 to 18 credits per semester as prescribed by the curriculum. With the approval of an Academic Advisor, students in good academic standing may register for more than 18 credits.

Full-Time Enrollment

Full-time enrollment is defined as at least 12 credits per semester. The program listings in this catalog are intended to present the required courses for the degree or certificate and to serve as a guide outlining appropriate combinations of courses by semester. In many programs, especially in the technologies and health care sciences, courses are arranged in a chronological sequence in which first semester courses are prerequisites to the next semester. To complete the minimum degree requirements of 60 credits in four semesters, 15 credits must be completed each semester, unless additional courses are taken in summer session. When students are required to complete developmental or remedial coursework, these courses must be completed in addition to the 60-credit minimum.

Part-Time Enrollment

Part-time enrollment is defined as less than 12 credits. The catalog organizes most programs of study in semester sequence, as stated previously, to present the required courses for the degree or certificate in a convenient way and to show prerequisite sequences. The part-time student should use the program of study listed in the catalog as a reference for degree requirements and recommended course sequences but not as a time frame for completion.

Registration

Each semester students are required to register for a planned program of courses selected with the recommended assistance of an academic advisor. Students must execute the forms needed for information purposes and pay tuition and fees.

Currently enrolled students may register online and will be notified of the procedures and dates for registration through the college (myLCCC) email system. Students required to meet with an advisor will be given an "alternate pin" to register online for classes.

Students are responsible for making certain that they have met all prerequisites for a course prior to enrollment in it. This includes specific course prerequisites as well as knowledge that is generally expected for college-level study, such as MLA writing style, academic honesty, etc. Students are strongly encouraged to review the college catalog, course descriptions and academic policies prior to enrollment, and to consult an academic advisor to discuss any questions.

Change in Course Registration

Once registered for a program of courses, a student is expected to attend classes according to the schedule assigned. If a student finds it necessary to drop a course, add a course or change from one course or section to another, the "drop/add form" must be completed and submitted to Registration/Student Records. Failure to do so may result in failing grades or loss of credit. Drop/add forms are available on the college website at www.lccc.edu or in the Office of Registration/Student Records.

A student may add or change from one course to another only during the first week of classes of a semester or the third day in a summer session. Refer to the "Tuition and Fees" section of this catalog.

Refer to the grading policy section for regulations dealing with the dropping of courses.

Change of Address

An address change should be filed as soon as possible with the Business Office by completing "Change of Information" and "Statement of Residency" forms.

Change of Major

Students who are considering a change of major should obtain a "Request for Program Change" form from Registration/Student Records and discuss the proposed change with an academic advisor or counselor.

A change of major will not be official without the completed form. Any changes for the current semester must be completed during the first three weeks of the semester. After that date, the change of major will be effective in the next semester. Students are responsible for following the new major requirements in the college catalog in the semester they are changing their major.

Undecided Student

New students who are exploring majors have the option of enrolling as an Undecided student. Thereafter, these students will work with designated advisors to explore their interests and skills and determine the most appropriate program of study. Undecided students must declare a program of study by the time they complete 30 college-level credits.

Testing and Placement

The purpose of skills assessment testing is to ensure that students are placed in courses best suited to their current academic abilities.

1. All students admitted to Lehigh Carbon Community College are required to complete the college skills assessment. Students may be eligible for testing exemptions based on high school or college work. For a complete list of exemptions, please visit our website at www.lccc.edu/exemptions. High school or college transcripts are required for exemptions. Students whose first language is not English must complete the English as a Second Language assessment. Students must complete the assessment prior to registering for any class.
2. Skills assessment scores will be valid for a period of two years from the date that the test was completed.

3. Students who wish to appeal any assessment or placement decision imposed by these policies may do so by contacting the appropriate Academic Dean.
4. Additional assessment tools are required for placement in the following subject areas: biology, chemistry and typing. Students with previous educational or work experience should complete the appropriate assessments for correct course placement. A typing placement test is available for advanced placement but is not required.

NOTE: Students requiring developmental courses should take them in their first semester.

Military Veterans Information

Lehigh Carbon Community College is proud of the military veterans who have served our country. The Montgomery G.I. Bill®, Post/911 G.I. Bill®, and 100% Tuition Paid (National Guard) are several examples of the programs that the government has created to assist veterans in the pursuit of higher education. Applicants with benefits may apply online through the G.I. Bill® website at www.gibill.va.gov.

Transition from military life to college is different than the traditional college student's transition. To help with this adjustment, an academic advisor who is knowledgeable in the student veteran's success is available to assist with decisions pertaining to college life, graduation, and entrance into careers and four-year colleges or universities. Student veterans are encouraged to meet with their advisor to discuss their options and strategies for success in the college environment.

Procedures:

- Apply for the G.I. Bill® – Contact Veterans Affairs or your command to find out what tuition assistance you qualify for. Veterans are encouraged to apply for benefits as soon as possible as it may take up to 20 weeks for the Department of Veterans Affairs to process.
- Apply for Admissions to the college online. Go to the LCCC website, www.lccc.edu and click on “Apply Now.”
- Submit your official military/Joint Services electronic transcripts online to jst@doded-mil:
CCAF Transcripts – For Air Force
USCG Transcripts – For Coast Guard
- Veterans can earn up to 18 credits toward their degree, provided that their military background is directly related to the degree program that they aspire to complete. The college assesses previous military education and experience based upon the recommendation of the American Council on Education.
- Complete the Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov.
- Complete the Veterans Affairs and college documents required by the Certifying Official in Registration/Student Records. For information on veteran's benefits, visit Registration/Student Records or contact us by telephone at 610-799-1177.
- Disability Services – For information on the Americans with Disability Act (ADA) and conditions for which veterans may be covered, contact Educational Support Services at 610-799-1156.
- Contact the Returning Adult Veteran Specialist for information and resources on veterans at 610-799-1545 or veterans@lccc.edu.

- The Career Development Center provides a variety of services to current students and will assist you with job search assistance, resume and cover letter development and review.

Students must maintain a minimum cumulative GPA of 2.0 to remain in good academic standing. Veterans/reservists/eligible dependents failing to maintain a 2.0 will be placed on academic alert, probation or suspension based upon their GPA. At the end of two academic semesters if the academic standing is below a 2.0, the Department of Veterans Affairs will be notified by the college within 30 days.

For veterans benefits, full-time status is defined as 12 or more credits per semester. In terms of shorter duration, “training” time is determined by the number of standard class sessions per week. This definition applies to the veterans programs for the education of spouses, surviving spouses, and sons and daughters of veterans. Questions about veterans benefits should be referred to the staff in Registration/Student Records.

Veteran Preference Course Scheduling Policy

Act 46 of 2014 requires public institutions of higher education in Pennsylvania to establish and provide veteran students with preference in course scheduling.

Noncompliance may be reported to the Pennsylvania Department of Education by submitting the Higher Education Student Complaint Form at www.education.state.pa.us.

Effective spring 2015, Lehigh Carbon Community College veteran students will be given course scheduling priority privileges. Veteran students will be notified of their registration date and process through their LCCC email.

Veteran students are defined as those students in the following categories:

1. Is a veteran.
2. The student has served in the United States Armed Forces including a reserve component or National Guard and was discharged or released from such service under conditions other than dishonorable.
3. The student has been admitted to a public institution of higher education.
4. The student resides in Pennsylvania while enrolled in the public institution of higher education.

A veteran student will be required to provide proof of their military services by either providing their DD214, discharge papers, military orders, etc.; if utilizing G.I. Bill® benefits many may have submitted supporting documentation.

Veteran students who are given course scheduling privileges will be able to begin registration one day earlier than our regular students. Refer to our regular scheduling timeline as defined by the Director of Registration/Student Records.

Course Scheduling Preference

The regular registration scheduling timeline is on the college website and is available to all students and is published three weeks prior to the beginning of the registration period. Veteran students that are required to meet with an advisor must schedule an appointment before registration and will be given a Personal Identification Number (PIN) to register online. If a veteran student has a financial obligation to the college, the student must pay the outstanding balance before registering for the semester. Students will be identified in our student information system Banner, and notified of the registration procedures two weeks prior to registration.

Information concerning this will be available on the college website, college catalog, and the Office of Veteran Affairs. All inquiries relating to priority course scheduling should be directed to the Director of Registration/Student Records.

ROTC

Students at LCCC are eligible to participate in Army Reserve Officer Training Corps (ROTC) programs. All ROTC courses are held on the Lehigh University campus in Bethlehem. Interested students should contact the Department of Military Science (Army) at Lehigh University. For more information, contact Matt Lawrence at armyrotc@lehigh.edu.

Senior Citizen Enrollment

Senior citizens over the age of sixty (60) years residing in the College Sponsor School Districts are eligible to register for enrollment tuition-free in a credit course on a space-available basis as of the day the course begins. All course fees or costs such as laboratory fees and out-of-pocket course costs incurred and paid for by the college such as for third party services provided, including, but not limited to, truck driving certifications and courses offered by the Baum School of Art, shall be paid for by the senior citizen student.

Eligibility requirements:

- Students must provide proof of age through their Medicare card, birth certificate or other official document.
- The requested course must have sufficient enrollment of regular students to justify offering it to senior citizens.
- The enrollment of senior citizens must not cause the class size to exceed college enrollment limitations.
- Partnership courses, e.g. The Baum School of Art, are excluded. Other courses may be excluded as designated by the college.

If the enrollment totals cause a senior citizen to be ineligible, attempts to find an open section or other alternative shall then be made.

Auditing a Course

Students enrolling in a course as auditors, affording neither credit nor grade, are expected to attend all classes except as arranged by prior agreement with the instructor concerned.

The regular tuition and fee schedules are applicable to audited courses. In order to audit a course, the student must have the required prerequisite/corequisite courses.

A grade of "L" (Listener) will be recorded on the student's transcript unless the instructor is not satisfied with the student's attendance, in which case a "W" will be assigned. Students may change from credit to audit or audit to credit during the first three weeks of class only.

Class Cancellation

Minimum enrollment is required for a class to be held. The college is committed to keeping tuition as low as possible. To achieve that goal, the college must cancel courses with low enrollments. LCCC realizes that canceling a class is inconvenient for affected students.

Attendance Policy

All faculty are required to report nonattendance for students that have missed nine consecutive hours of unexcused absences. Each faculty member is free to establish an attendance policy of his or her own as long as it meets the above stated minimum requirements and is included in their course syllabus.

Failure to officially withdraw from a course(s) may result in a failing final grade. The college reserves the right to administratively drop or withdraw from the course.

To officially withdraw, a student must submit a written request or completed form found at <https://www.lccc.edu>. Click on: Current Students. Click on: Registration/Student Records. Click on Withdrawal/Refund Policy & Forms) in one of four ways:

- Email it to us from your LCCC email account to: registrar@mymail.lccc.edu.
- Drop it off at the Registration/Student Records office (SSC 122 in Schnecksville) or at any site office.
- Fax the signed form to us at 610-799-1173, or
- Mail the signed form to us at LCCC, Registration/Student Records, 4525 Education Park Drive, Schnecksville Pa. 18078.

Absence to Observe Religious Holiday

The observance of a religious holiday will be considered an excused absence from classes, provided that the student notifies their instructors one week in advance of the holiday absence. As with all absences, the student remains responsible for all missed work. For questions or clarifications, please contact the appropriate dean.

Absence to Attend Jury Duty

Absence to attend jury duty will be considered an excused absence provided that the student notifies his or her instructor in advance, provides a copy of the summons, and is responsible for all work missed.

Withdrawal from College

To withdraw from all classes, students must either secure and complete an "Official Student Withdrawal Request" form or present a letter by fax or mail to the Office of Registration/Student Records stating the reasons for leaving the college. For academic and financial purposes, the effective date of the withdrawal shall, if approved, be the date of receipt of this letter. Student-initiated withdrawals from a class must be processed at the Office of Registration/Student Records by the 10th week. (For the specific date, see the 2018-2019 Academic Calendar at the front of this catalog.)

Students enrolled under any program from which financial aid is derived are responsible for informing the Office of Financial Aid, government agency or benefactor. Failure to follow the official withdrawal procedure may result in the recording of failing grades. College equipment and library books must be returned before the withdrawal is considered complete.

Withdrawal from College for Active Military Duty

Students who have been ordered to report for active duty with one of the branches of the United States military (Army, Navy, Air Force, Marines, or National Guard) may withdraw from classes at LCCC without academic or financial penalty. Students wishing to be considered for such a withdrawal must complete the following process:

1. Complete an "Official Student Withdrawal Request" form, available at Registration/Student Records, or write a letter requesting withdrawal from all coursework.
2. Attach a copy of active duty orders from the military to the completed form and submit all documents to the Office of Registration/Student Records, Schnecksville Campus.

Students who complete this process will receive a 100% refund on tuition and fees from the college for the specified semester of withdrawal. In addition, the bookstore will provide a 100% refund on all books purchased for that same semester. Students receiving financial aid will have the aid cancelled for that semester.

If 80% of the class has been completed, the student can make arrangements with the faculty member to receive an incomplete grade. The faculty member has the option to issue an "I" grade as the final grade, providing the student with the option to complete the course, rather than lose the time and effort already invested.

Further questions should be directed to the Office of Registration/Student Records.

Withdrawal for Medical/Mental Health Reasons

LCCC students may apply to withdraw from courses for medical or mental health reasons. Failure to officially withdraw may result in the recording of failing grades. Students seeking to withdraw due to medical or mental health reasons must withdraw from all registered courses.

In order for a Medical/Mental Health Withdrawal Request to be considered for a given semester, all required documents must be submitted prior to the start of final examinations week. A Packet for Withdrawal for Medical/Mental Health Reasons can be obtained from the Office of the Dean of Student Support and Success (SSC 126) or at myLCCC.

All approved requests will result in the assignment of "W" grades for each course on the student's academic transcript. Please note that "W" grades will not be assigned if the request process is not completed prior to the start of final examinations week.

Tuition refunds will be distributed as stated in the College Refund Policy. (See College Refund Policy). If the withdrawal is due to a sudden medical/mental health emergency and the student's account is paid in full, tuition credit (for the up-coming semester) may be considered. Students remain fully responsible for College fees, outstanding fines and repayment of financial aid for which they are no longer eligible as mandated by the Federal Government. (See Withdrawal Policy for Students Receiving Financial Aid.)

Students who withdraw due to medical/mental health reasons will be required to satisfy conditions of medical clearance prior to re-entry. See Packet for Withdrawal for Medical/Mental Health Reasons.

The complete policy is in the Student Handbook, or can be obtained at the Office of the Dean of Student Support and Success, SSC 126 or by calling 610-799-1895.

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Academic Policies

Academic Standing and Progress

The college is committed to the academic success of every student. The college will monitor a student's grades and issue an appropriate warning if grades are inadequate. Academic standing is determined by the standards for academic progress listed below.

Eligibility to graduate with a certificate or degree requires a cumulative GPA of at least 2.0 in all coursework applicable to graduation. Courses with "F" grades do not count toward graduation but are used in calculating the GPA.

Note: Exceptions to this policy are noted in the program descriptions within this catalog. Some Health Care Sciences programs require a standard that is higher than 2.0.

Academic Progress Table:

GPA Credit Hours	Suspension	Probation	Alert	Good Standing
1–15		.00–.99	1.00–1.99	2.00
16–22	.00–.99	1.00–1.49	1.50–1.99	2.00
23–30	.00–1.49	1.50–1.74	1.75–1.99	2.00
31 and up	.00–1.74	1.75–1.99	< 2.00*	2.00

*Students who had maintained satisfactory progress through 30 credits will be placed on Academic Alert the first time their GPA goes below 2.00.

Dean's List

Credit students completing at least six credits may be named to the Dean's List upon achieving passing final grades in all subjects and earning an average of at least 3.5. Students with grades of "F," "I," "W," "Y," or "Z" will not be considered for Dean's List, with the exception of those students who withdraw within the first three weeks and are assigned a grade of "W."

Academic Alert

Students who fail to make satisfactory academic progress as defined by the Academic Progress Table will be placed on Academic Alert.

Students placed on Academic Alert receive a letter from the Dean of Student Support and Success informing them of their academic standing and suggesting the use of college services to improve academic performance.

Academic Probation

Students who fail to meet satisfactory academic progress as defined by the Academic Progress Table will be placed on Academic Probation.

Students placed on Academic Probation receive a letter from the Dean of Student Support and Success informing them of their academic standing and the requirements that must be met to register for the next semester.

Academic Suspension

Students placed on Academic Suspension receive a letter from the Dean of Student Support and Success informing them of their academic standing. Students placed on Academic Suspension will be academically suspended from the college for a period of one semester.

Upon return, students must meet with an Academic Advisor or Counselor to establish an academic success plan. Students who do not want to miss a semester may choose to participate in the Alternative to Academic Suspension program.

Alternative to Academic Suspension

The Alternative to Academic Suspension program is a one-semester option available to students placed on Academic Suspension.

To participate, students must contact the Director of Advising to develop an academic contract for the upcoming semester. The contract may include part-time status, repeating failed courses, enrolling in a study skills course and other requirements deemed necessary for success. The contract must be approved by the Dean of Student Support and Success.

Students must successfully complete all credits attempted and achieve a semester GPA of at least a 2.0 to continue enrollment at the college.

Academic Dismissal

Students who fail to make satisfactory academic progress, in that they were not successful in the Alternative to Academic Suspension program or did not achieve a semester GPA of at least 2.0 after the first semester following one semester of academic suspension, will be placed on Academic Dismissal.

Students placed on Academic Dismissal will receive a letter from the Dean of Student Support and Success informing them of their academic standing and dismissal from the college.

Academic Reinstatement

Students who have been academically dismissed may apply for reinstatement after one year, if they can demonstrate that the circumstances that contributed to their past poor academic performance have been eliminated or managed so as to promote academic success.

Reinstatement Application Process

To apply for reinstatement, the student must submit a completed Application for Academic Reinstatement to the Director of Registration/Student Records prior to the following dates:

- June 15 – for fall semester reinstatement
- October 15 – for spring semester reinstatement
- Reinstatement will not be considered for summer sessions.

To apply for reinstatement, follow the steps below:

1. Complete and submit the “Application for Academic Reinstatement” and the “Academic Reinstatement Questionnaire” before the application dates listed above.

2. If you attended another college since you last attended LCCC, indicate such on your application and send your official transcript to the Office of Registration/Student Records at 4525 Education Park Drive, Schnecksville, PA 18078.
3. If you were dismissed more than four years ago, submit your application and contact the Advising Center.
4. Provide documentation of other activities that demonstrate your readiness to return and succeed at college study (e.g. military service, employment experience, etc.)

The student is required to appear before the Academic Review Committee to present the application and the changed circumstances. The student will be notified of the reinstatement hearing date within 7-10 days of the application deadline, and will be notified of the Committee’s decision within 7-10 days following the hearing date.

Reinstatement Actions and Requirements

Students approved for academic reinstatement will be required to meet with an Academic Advisor to develop an academic contract for the upcoming semester. The contract may limit the number of credit hours in which the student may enroll, may require repeating failed courses, enrolling in specific courses, and other requirements deemed necessary for success. The contract must be approved by the Dean of Student Support and Success.

Reinstated students must successfully complete all credits attempted and achieve a semester GPA of at least 2.0 to continue enrollment at the college.

Repeated Academic Dismissals

Reinstated students who are dismissed a second time may apply for academic reinstatement after two years, if they can demonstrate ability to succeed as indicated above. Reinstated students who are dismissed a third time may not apply for reinstatement at LCCC.

Appeal Process

Students may appeal the reinstatement decision of the Academic Review Committee if they can demonstrate:

- a. Procedural error occurred in the interpretation of college regulations that effectively denied the student fair consideration;
- b. The decision is held to be arbitrary and capricious.

Appeals must be submitted in writing to the Dean of Student Support and Success within 5 days of the student’s receipt of the Committee’s decision. Whenever possible, the Dean will seek the recommendation of alternate Committee members. The decision of the Dean is final.

Academic Review Committee

This is a group of faculty and administrative staff who convenes prior to the start of each fall and spring academic semester to review academic standing of students and consider students’ applications for academic reinstatement.

Academic Restart

Academic Restart provides students who compiled an unsuccessful academic record with a one-time-only opportunity to reset the Lehigh Carbon Community College GPA and the cumulative credits earned total to zero.

Eligibility criteria:

1. The student has not been enrolled at LCCC for at least four consecutive years;
2. The student has never been granted academic restart; and
3. The application for Academic Restart must be submitted no later than the end of the second term after returning.
4. If academically dismissed, the student has completed the academic reinstatement process and has been approved for reinstatement.

The previous record will remain on the transcript and will not be used in the computation of the new GPA.

The intent of this policy is a complete restart. No previous courses, regardless of grades, may be counted in the new GPA and will not be counted toward graduation. Interested students may obtain the Academic Restart Application at the Office of Registration/Student Records.

Grading

Grade Level Advancement Policy

After successful completion of 30 or more credits, a student is considered a second year student.

Grading System

1. A student who officially withdraws from one or all classes through the tenth week of the semester will receive a grade of "W" (Withdrawal).
2. All students not withdrawing officially by the end of week 10 shall be assigned a grade of "A," "A-," "B+," "B," "B-," "C+," "C," "C-," "D," "F," "I" (Incomplete), "L" (Listener), "R" (Released), "W," or "Z" (Not Released) by the instructor. All non-passing grades require a date of last attendance.
3. A student receiving an "I" grade must fulfill the requirements established by the instructor issuing the grade. An "F" grade is assigned if requirements are not met by the deadline.
4. A student may change from credit to audit or audit to credit only during the first three weeks of class.

Grade appeals must be addressed by the student with the instructor. If the student remains dissatisfied, he or she may file a complaint with the Ombudsman. For further information, please refer to the Rights, Freedoms, and Responsibilities of Students policy in the student handbook.

Final Grades and Transcripts

Students can view final grades and their transcript by accessing Lehigh Carbon Community College's website (www.lccc.edu) then through the portal by logging into "myLCCC." and clicking on My Records.

A student may request an official transcript one of six ways:

1. E-Transcripts: Available 24/7, where you may request your official electronic transcript at: www.getmytranscript.com.

A \$5.00 fee is charged to the student for each email address where the e-transcript is sent.

A student may request an official paper transcript one of five ways:

1. Go to www.lccc.edu, log into "myLCCC" portal and select "Request a Printed Transcript."
2. Email the signed "Transcript Request Form" to registrar@mymail.lccc.edu.
3. By fax with signature: 610-799-1173.
4. By mail with signature: LCCC, Registration/Student Records, 4525 Education Park Drive, Schnecksville, PA 18078.
5. In Person with photo ID (no exceptions).

Incomplete Grade

An "I" grade may be issued only under these general guidelines:

1. "I" grades may be issued to students who have completed 80% of the class and are only missing the last 20% of the course work in the semester/session.
2. Work remaining should not require formal assistance from the instructor; for example, the student should be able to fulfill the outstanding obligations on his or her own.

The student is expected to notify his or her instructor prior to the final examination to explain the reason that additional time is needed to complete the course requirements.

An "I" grade must be removed before the end of the ninth week of classes in the next semester or a failing grade will be recorded for the course. An exception will be made if a lab course requires a special set-up.

Report of Grades

Only "D" and "F" grades are reported to students at mid-semester, except for ADN and NUR courses which will also report C and C- grades. Students are urged to discuss their academic progress with all instructors and particularly with those instructors from whom they received unsatisfactory grades. Students who receive more than one failing grade are advised to meet with an academic advisor, counselor or faculty advisor to discuss their academic performance.

The final grade report at the end of the semester is assumed correct as posted unless a question is raised within one year of its recording.

Quality Points/Grade Point Average

Each final grade used in the calculation of the GPA is assigned a quality point value. The numeric value of the grade (A = 4.0, A- = 3.7, B+ = 3.3, B = 3.0, B- = 2.7, C+ = 2.3, C = 2.0, C- = 1.7, D = 1.0, F = 0.0) is multiplied by the number of credits for the particular course to obtain the quality points earned in that course.

The sum of the quality points of the courses taken is used to calculate an average. The equation used is as follows:

$$\text{Total Quality Points} = \text{GPA}$$

$$\text{Total Credits}$$

The final grades used in calculating the GPAs are as follows:

A	= 4.0	Quality Points per Credit
A-	= 3.7	Quality Points per Credit
B+	= 3.3	Quality Points per Credit
B	= 3.0	Quality Points per Credit
B-	= 2.7	Quality Points per Credit
C+	= 2.3	Quality Points per Credit
C	= 2.0	Quality Points per Credit
C-	= 1.7	Quality Points per Credit
D	= 1.0	Quality Points per Credit
F	= 0.0	Quality Points per Credit

Final grades that have no effect on GPA are as follows:

I	Incomplete
L	Listener (audit)
R	Released (pass)
W	Withdrawal
WA	Administrative Withdrawal
Z	Not Released

Example:

Course	Credits	x	Grade	Quality	=Total Points
ENG 105	3	x	B	3	= 9
HIS 120	3	x	C	2	= 6
MAT 105	3	x	B	3	= 9
BIO 205	4	x	A	4	= 16
ART 101	3	x	A	4	= 12
totals	16				52

$$52 = 3.25 \text{ Grade Point Average (GPA)}$$

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A grade followed by an "H" designates an honors course.
A grade followed by an "R" designates academic restart.
A grade followed by a "^" designates a 090- to 099-level course.

Courses numbered 100 or lower do not count toward graduation requirements.

Repeated Course – An "E" or "I" in the Final Column (R) on the transcript indicates a repeated course. "I" means the grade is included in the GPA calculation, and "E" means the grade is excluded in the GPA calculation.

When a student repeats a course, his or her GPA is recalculated based upon his or her latest grade in the course. This procedure does not apply when the grade received is a "W."

Degree, Certificate and Specialized Credit Diploma Requirements

Selection of courses applicable for graduation requirements is the responsibility of each student. The student should follow the catalog the year they enrolled as a new student. If the student changes their major after they initially apply, they must follow the new program requirements in the semester they are changing their major. Students who attended classes at the college previously, but then discontinued their enrollment in the past 12 months or more, must complete an online returning student application and follow the new catalog requirements.

Students may request a "Petition to Change Catalog Term" if their program has been updated by new curriculum. This form must be signed prior to registration before their last semester by an advisor or counselor and submitted to the Office of Registration/Student Records.

Degrees:

The general requirements for all associate degrees are as follows:

1. Attain at least a 2.0 program and cumulative GPA. Courses with "F" grades will not count toward degree requirements.
2. Fulfill all financial obligations to the college.
3. Courses numbered below 101 may not be used toward the degree or certificate.
4. To receive an additional associate degree, students must earn at least 15 additional college-level credits at LCCC with courses 101 and above.

NOTE: Physical education courses may not be repeated for credit.

Following are additional requirements for each of the associate degrees:

Associate in Arts (A.A.) and Associate in Science (A.S.) Degrees

1. Fulfill the general requirements as listed previously.
2. Successfully complete at least 60 credits in an approved program of study, of which 15 credits must be taken at LCCC through course enrollment.
3. Complete 22 credits in general education:

College English Series (ENG 105, 106)	6 credits
Humanities and Social Sciences	9 credits
Mathematics	3 credits
Laboratory Science	4 credits
4. Complete core requirements of the appropriate program.

NOTE: ENG 100 and MAT 090 or MAT 100 may not be used to satisfy the credits required in the College English series or the credits required in mathematics or science. All general education courses must be courses numbered 101 or higher.

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

1. Fulfill the general requirements as listed previously.
2. Successfully complete at least 60 credits in an approved program of studies, of which 15 credits must be taken at LCCC through course enrollment.
3. Complete 21 credits in general education:

College English Series (ENG 105 and 106 or 107 or 108)	6 credits
Mathematics/Science	6–8 credits
Humanities and Social Sciences	6 credits
General Education Elective	3 credits
4. Complete the required courses in the specific program.

NOTE: ENG 100 and MAT 090 or MAT 100 may not be used to satisfy the credits required in the College English series or the credits required in mathematics or science. All general education courses must be courses numbered 101 or higher.

Certificate

1. Complete an approved certificate program of at least 30 credits in courses numbered 101 or higher, of which at least 25% of the credits must be taken at LCCC through course enrollment.
2. Earn a cumulative GPA of at least 2.0. Students enrolled in any Health Care Sciences program must pass all courses related to that field of study.
3. Fulfill all financial obligations to the college.

Credits earned in certificate programs are applicable to Associate in Applied Science (A.A.S.) degrees in the same field.

Specialized Credit Diploma

1. Complete an approved specialized credit diploma program of at least 9 credits in courses numbered 101 or higher, of which at least 25% of the credits must be taken at LCCC through course enrollment.
2. Earn a cumulative GPA of at least 2.0.
3. Fulfill all financial obligations to the college.

Credits earned in most specialized credit diploma programs are applicable to certificates in the same field.

Graduation

All students who wish to graduate with a degree, certificate or specialized diploma must submit an application for graduation.

Graduation applications are available:

- At Registration/Student Records Office, Main Campus
- At the main offices of campus sites at Carbon Center, Donley Center and Morgan Center
- Online at www.lccc.edu

Applications should be completed and submitted to the Registration/Student Records Office no later than:

- October 1 for December graduation
- February 1 for May graduation
- June 1 for August graduation

The college holds a traditional commencement ceremony and reception in May for all graduates. August and December graduates are invited to attend the commencement ceremony in May following their graduation date.

Commencement details will be communicated via email/U.S. mail to all students.

Graduation with Academic Honors

Students who earn a cumulative GPA of at least 3.5 will graduate “with honors,” as indicated below:

- Summa Cum Laude (Highest Honors) – GPA of 3.95 and above
- Magna Cum Laude (High Honors) – GPA of 3.75 to 3.94
- Cum Laude (Honors) – GPA of 3.5 to 3.74

Academic Awards

Outstanding graduating students are honored annually for their achievements. Awards presented include the following:

- All-Pennsylvania Academic Team
- Associate Degree Nursing Faculty Recognition Award
- Clark E. “Willie” Hartman Award
- Climax Goulder Bealine Award
- Computer Science Faculty Recognition Awards
- Country Doctor Veterinary Hospital Award
- Distinction in Psychology Award
- Distinction in Science Award
- Gilbert A. Scheetz Scholastic Achievement Award
- Jennifer Smith Memorial Veterinary Technician Award
- Jennifer L. Snyder Memorial Veterinary Technician Scholarship
- Joanne Gerken Graduation Speaker Award
- LCCC Faculty Association Student of the Year Award
- Lehigh County Chapter of American Association of Medical Assistants Award
- Lehigh County Medical Society Awards
- Mathematics Achievement Award
- Occupational Therapy Assistant, The Professional Development Award
- Occupational Therapy Assistant Student Association Award
- Occupational Therapy Assistant Outstanding Student Award
- Occupational Therapy Assistant Student Scholarship Award
- Pennsylvania Institute of Certified Public Accountants Award
- Philip Fahy Memorial Award
- Professor Elizabeth (Bette) Hummer Memorial Award
- Professor William L.F. and Mrs. Mary Joan Schmehl Political Science Organization Alumni Award
- Rosemary Kradel Mathematics Achievement Award
- Student Nurses Association of Pennsylvania (SNAP) - LCCC Chapter Service Award
- Teacher Education Student Association Scholarship Award
- Wayne E. Kirker Award
- Wright Veterinary Medical Center Veterinary Technician Award

Student Information



Allentown | Jim Thorpe | Schnecksville | Tamaqua | LVI Airport
Baum School of Art | Online

Start Here | Go Anywhere

Smoke-Free Campus Policy

Effective January 1, 2007, the college became a smoke-free and tobacco-free campus. The college has adopted the following policy related to smoking and tobacco use: Smoking and/or the use of tobacco products is prohibited in all buildings and on all grounds of the Schnecksville campus of Lehigh Carbon Community College. Smoking and/or the use of tobacco products is prohibited at all other college-owned and college-leased buildings and grounds and owned or leased vehicles.

Drug-Free Campus Policy

It is the policy of Lehigh Carbon Community College, in compliance with the Drug Free Workplace Act of 1988 and the Drug Free Schools and Community Act Amendments of 1989, to maintain a drug-free campus. The unlawful use, possession, manufacture, distribution or sale of alcohol, narcotics or illicit drugs on campus or as a part of college activities is strictly prohibited.

College officials will cooperate with local, state and federal authorities to ensure compliance with all laws. Convictions or violations of these laws can lead to fines and/or imprisonment.

Annual Security Report and Disclosure of Crime Statistics

LCCC's Public Safety & Security Department, in conjunction with the President of Lehigh Carbon Community College, prepares a report to comply with the Jeanne Clery Disclosure of Campus Security and Crime Statistics Act using information maintained by the Department of Public Safety and Security and information provided by state and local law enforcement surrounding Lehigh Carbon Community College and its satellite campuses.

The report provides statistics for the previous three years concerning reported crimes that occurred on campus, on certain off-campus buildings or properties owned, leased or controlled by Lehigh Carbon Community College. This report also includes institutional policies concerning campus security, such as policies regarding sexual assault, alcohol and other drugs.

Lehigh Carbon Community College distributes a notice of availability of this Annual Security Report each year to every member of the College community and anyone, including prospective students and employees, may obtain a paper copy of this report by contacting the Department of Public Safety and Security at 610-799-1169 or by visiting www.lccc.edu/about/safety-and-security.

Student Conduct

A student's enrollment in the college is a privilege extended by the college. By the act of registration, students agree to adhere to the regulations of the college and to cooperate in their enforcement. Behavior on campus that is considered in violation of federal, state or local statutes; college rules and regulations; or in any way disrupts the orderly conduct of college activities, may result in conduct action. The Dean of Student Support and Success or designee will address all reports of misconduct in

accordance with the Lehigh Carbon Community College Code of Student Conduct. This document can be found in the Student Policies and Procedures on the college website, or by contacting the Office of Student Life at 610-799-1146 or the Office of Student Support and Success at 610-799-1895.

Student Identification

Students are required to carry and present valid photo identification when requested to do so by authorized college officials. The following photo IDs are acceptable: LCCC ID, current Driver's License, current Pennsylvania State ID Card, current Passport or current Military ID.

LCCC photo identification cards can be obtained through the Registration/Student Records Office, Student Services Center, SSC 122, on the Schnecksville campus or through the main office at the Allentown, Jim Thorpe, and Tamaqua sites. Replacement cards are available at a cost of \$5.00. The LCCC identification card also serves as identification for use at the college Library.

User IDs and Passwords

Students are issued a user ID and password to access their personal portal site upon acceptance to LCCC. Students are to refrain from sharing or allowing other individuals (e.g. students, parents, friends) to use their user ID and password to gain access to LCCC portal sites. Students that lose, misplace or forget their user ID and password can go to Registration/Student Records (with valid photo ID) to have both reset.

If a student forgets his/her password, the student has the ability to utilize the Change Password functionality in the portal. Answers to Password Reset Questions are required the first time a student logs into the portal. A student can reset his/her password at any time by providing the correct answers to the questions.

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) of 1974, also known as the Buckley Amendment, is a federal law that protects the privacy of student educational records. The law governs the release of educational records maintained by the college and who has access to the records. All educational institutions that provide educational services to students who are attending the institution and receive funds from any program administered by the U.S. Secretary of Education must comply with FERPA regulations. The rights of students are as follows:

- the right to inspect and review education records;
- the right to seek to amend education records;
- the right to limit disclosure of personally identifiable directory information; and
- the right to file a complaint with the Department of Education.

For more information on FERPA, go to LCCC's website at www.lccc.edu.

Ombudsman

The primary function of the ombudsman is to receive requests for information and to hear specific complaints about any aspect of the college in terms of its functions, policies or personnel. All complaints or problems are carefully investigated by the ombudsman who will then take one of the following steps:

1. Resolve the matter informally through direct mediation between the various parties involved.
2. Refer the matter, with or without a recommendation for action, to the appropriate college decision-making person or group.
3. Refer the matter for a formal hearing and resolution before the appropriate person or group.

If any student encounters a problem at the college for which a solution has not been reached by meeting with the appropriate person directly (instructor, staff, administrative officer), the student should speak with the ombudsman.

The ombudsman, who reports directly to the president, cannot impose a resolution, change a policy or rectify a grievance per se. However, he/she does have broad investigative powers and various resources available. Questions can be effectively answered, needs identified, change initiated, and resolutions to problems and grievances suggested. Please call 610-295-5168 or visit hirevision.issuetrak.com.

Student Government Association (SGA)

SGA is the governing body of all LCCC students. The SGA Senate is comprised of up to 21 senators.

The senators are busy throughout the year promoting the interests of LCCC students, preparing and managing the SGA budget, and planning campus-wide events to enhance student life opportunities at LCCC. These activities are coordinated by the three SGA Standing Committees: Advocacy, Programming and Finance.

Participation as an SGA senator provides individuals with many opportunities for personal and professional development. These experiences will enhance students' resumes and increase their marketability as they prepare to transfer to a four-year institution or enter the workforce. Opportunities are also available to travel to regional and national conferences designed to enhance leadership skills and keep students informed about the latest trends in student governance, programming, and current affairs in higher education.

Service to the college as an SGA senator has many benefits. Students who want to make the most of their academic experience at LCCC by taking advantage of these opportunities are encouraged to visit the Student Life Office or call 610-799-1146.

Student Organizations

- Anime Club
- Art Club
- Campus Christian Fellowship
- Computer Science Club
- Entrepreneur Club
- GSA - Pride Club
- LCCC Film Club
- Intercultural Student Association
- Justice Society
- Kappa Delta Pi – Education Honor Society
- LCCC Literary Magazine - Xanadu
- LCCC Political Society
- Northern Tier Sociology Club
- Occupational Therapy Assistant Club
- Phi Theta Kappa – national co-ed society for honor students
- Photography Club
- Physical Therapist Assistant Club
- Practical Nursing Student Organization (PNSO)
- Psychology Club
- Rugby Club
- SGA – Student Government Association
- Student Nurses Association of PA (SNAP) – LCCC Chapter
- STEM Club (Science, Technology, Mathematics and Engineering)
- Teacher Education Student Association
- Veterans Club
- Vet Tech Student Association

Athletics

Intercollegiate Athletics

LCCC is a member of the National Junior College Athletic Association (NJCAA), Region XIX and the Eastern Pennsylvania Athletic Conference (EPAC).

The college currently offers the following intercollegiate sports:

Women's Basketball
 Women's Softball
 Women's Soccer
 Women's Volleyball
 Men's Basketball
 Men's Baseball
 Men's Soccer
 Golf



To be eligible to compete in intercollegiate sports, a student must complete a minimum of 12 credits each semester and maintain satisfactory academic progress with a 2.0 GPA. For additional information, contact the Director of Athletics at 610-799-1155.

Honor Societies

Kappa Beta Delta

Kappa Beta Delta (KBD) is an international honor society designed to encourage and recognize scholarship and accomplishment among students in ACBSP-accredited associate degree programs at two-year schools. It promotes personal and professional improvement and service to others. ACBSP stands for the Accreditation Council for Business Schools and Programs, the accrediting body for LCCC's business programs. KBD membership is available exclusively to students enrolled at institutions accredited by ACBSP.

To be eligible for membership, students must have completed at least 15 credit hours, with a minimum of six credit hours in business or related courses. Students must also rank in the top 20% of all business or related majors, with a cumulative GPA of at least 3.0. Eligible students are invited to membership each spring. An honor stole is available for purchase to wear at graduation.

For more information about Kappa Beta Delta, please visit www.acbsp.org/?page=kbd, or contact Rachel Plaksa at rplaksa@lccc.edu, 610-799-1508.

Kappa Delta Pi

Kappa Delta Pi is an international honor society in education dedicated to scholarship and excellence in education. Lehigh Carbon Community College's Alpha Epsilon Zeta chapter, established in 2009, is the first community college chapter in the state of Pennsylvania.

Founded in 1911 at the University of Illinois, Kappa Delta Pi is the largest honor society in education, representing 572 undergraduate and professional chapters and more than 45,000 active members. Its most distinguished members over the last century have included Margaret Mead, Albert Einstein, George Washington Carver, and current leaders in education Howard Gardner, Maxine Greene and Carol Gilligan.

The Society inducts only those individuals who have exhibited the ideals of scholarship, integrity in service, and commitment to excellence in teaching and its allied professions. Undergraduates must have first-term sophomore standing of 30 hours (students may join as a second-term freshman if 30 semester hours will be completed by the end of the second term), a GPA of 3.0, and be enrolled in an education-related program of study. Selection as a member of Kappa Delta Pi is based on high academic achievement, a commitment to education as a career, and a professional attitude that assures steady growth in the profession.

The Kappa Delta Pi Education Foundation and local chapters award more than \$100,000 annually in scholarships and grants for academic study to active members who are undergraduate, graduate or doctoral degree-seeking students. The Society also awards teacher Classroom Grants to practicing educators to enable them to deliver classroom projects that otherwise might not be possible.

For more information about Kappa Delta Pi, please visit their website at www.kdp.org, or contact Laura Segatti at lsegatti@lccc.edu.

Phi Theta Kappa

Phi Theta Kappa was founded in 1918 by the presidents of the Missouri Junior Colleges. Modeled after Phi Beta Kappa, the National Honor Society for four-year colleges and universities, the society has the following purposes: to recognize academic excellence among two-year college students, to provide opportunities for leadership training, to provide an intellectual climate for the interchange of ideas and ideals, and to encourage scholars to continue their education. In 1929, the society gained national recognition as the "Nation's Honor Society for Two-Year Colleges" by the American Association of Junior Colleges (later the American Association of Junior and Community Colleges). Today, there are approximately 800 chapters and 100 Alumni chapters. The purpose of Phi Theta Kappa is the promotion of scholarship, development of leadership, and service and cultivation of fellowship among qualified students.

At LCCC, students are invited to join Phi Theta Kappa after they have completed a minimum of 12 semester hours of associate degree work at LCCC and achieved a minimum GPA of 3.5. Eligibility for membership requires that students adhere to the college conduct code and possess recognized qualities of citizenship. Invitations to join are sent in the fall and spring semesters.

Phi Theta Kappa offers members over \$35 million in transfer scholarships to four-year institutions across the country. In addition, Phi Theta Kappa members wear an honor stole and gold tassel at graduation. Their academic transcript from LCCC will also indicate membership in this select society.

For more information about Phi Theta Kappa, please stop by the Student Life Office or call 610-799-1146.

Psi Beta

Psi Beta is the national honor society in psychology for community colleges. The mission of Psi Beta is professional development of psychology students through promotion and recognition of excellence in scholarship, leadership, research and community service. The society functions as a community of chapters located at over 170 accredited two-year colleges. Students are invited to membership if they have completed at least 12 credits (at least 3 must be in psychology) and have a grade point average of 3.2 or higher.

Psi Beta members are eligible for research competitions on the regional and national levels. There is a Psi Beta scholarship award available at Cedar Crest College.

A National Council composed of Psi Beta advisors guides the affairs of the organization and determines policy. The national office coordinates and records activities and maintains membership files. Psi Beta participates with Psi Chi and other organizations at APA, APS, and regional psychology conventions.

SALUTE

SALUTE is an honor society for service members. All students selected for induction in SALUTE must meet the following criteria:

- Be currently enrolled as a student.
- Qualify as military/veteran student under locally-derived and maintained definitions. Applicant must submit a DD-214 Member 4 copy that displays the character of service (honorable discharge). Applicants currently serving on active duty or in the Guard or Reserves must submit a copy of orders for their current duty assignment.
- Have a GPA of at least 3.00, not rounded.
- Maintain the highest ethical standards.
- Students eligible for SALUTE will be contacted annually. The chapter councilor at LCCC is the Veterans/Returning Adult Specialist.

Berrier Hall

These newly-renovated facilities include a state-of-the-art Wellness Center, Game Room, Dance Studio and Gymnasium. The Wellness Center houses a complete cardio studio and weight training room and is staffed during hours of operation to assist students with the use of the equipment. Information about health and wellness, important to a student's success and development, is also available. These facilities provide a common meeting area for the college community to enjoy recreational, social and athletic activities.

Berrier Hall is home to the Athletic, Physical Education, and Student Life Departments and the Student Government Association.

The lower level of Berrier Hall features a spacious game room which has pool tables, video games, and a 52-inch TV.

Please visit the college website for a complete listing of hours and activities for Berrier Hall.

Rothrock Library

In support of the research and informational needs of the students, faculty, and community at large, the library's collections include print, electronic and audio-visual resources. Featured are more than 53,000 volumes, 182 current periodical titles, 1,900 audio-visual items and a selection of 48 databases which provide online access to thousands of periodicals, newspapers and additional resources. These materials may be accessed from home and campus at www.lccc.edu/library. In addition, membership in an international consortium of more than 42,000 libraries (OCLC) allows us to search and borrow from a combined collection of more than 50 million items. These services allow us to widen the scope of research materials available to our users.

Public-access computers and a connection to the campus wireless network provide students with ample opportunity to access resources on campus. Individual study carrels and group study rooms are also available.

The programs, resources and services of the library are fundamental to the educational mission of the college and to the teaching and learning process. Although the college encourages exploration and self-study, we believe the most important resource available to all library users is the supportive, knowledgeable, able, and willing library staff, who are available in person, on the telephone or online to assist with research and use of library resources.

In addition, working with faculty in the classroom, the staff provides an active and continuing program of library orientation and instruction in accessing information to help students develop information literacy—the ability to state a need, and then locate, evaluate and use information in order to become lifelong independent learners.

Online learners and students at the off-campus sites have access to these same resources and services. Additionally, the sites have reference collections and materials that support their educational programs. Library staffing is also available, and a courier service delivers requested materials to the sites.

The library staff looks forward to helping all students meet their educational goals. Please visit the college website for a complete listing of hours and activities for the Rothrock Library.

Student Union

The Student Union is in the center of main campus between the Student Services Center and Science Hall. The Student Union is designed to be the community center for the LCCC family.

This building houses several lounges and a stage area for performances. The Student Union affords students, faculty and administrators opportunities for cultural, social and recreational activities.

Academic Advising Services

Academic Advising offers a variety of services for students to develop an academic plan and provide a campus-based support structure. Academic advisors and counselors are available at all LCCC locations. Appointments can be made by calling the following:

Carbon Center: 570-669-7010

Donley Center: 610-799-1940

Morgan Center: 570-668-6880

Schnecksville Campus: 610-799-1137

New Students

All newly admitted degree-seeking students are required to meet with an academic advisor prior to enrollment. The academic advisor will review transcripts of previous college work, placement test results, academic, career and personal goals, as well as the requirements of the program of study. With this information, the advisor will help the student make the most appropriate course selections.

Continuing Students

Continuing students are encouraged to meet with an academic advisor prior to registration. Students are required to do so if:

- on academic probation;
- participating in the alternative to academic suspension program;
- enrolled in programs that require an advisor signature; or
- participating on an LCCC athletic team.

Students may seek assistance through one of the following sources:

- an academic advisor or counselor;
- a faculty member in the program of study; or
- via email at advise@lccc.edu.

Student Responsibility for Academic Advisement

While the college provides academic advisors as resource personnel for students, the student, not the academic advisor, is responsible for the schedule of courses. The student is ultimately responsible for meeting the degree requirements of the selected program of study. Extensive information and resources are available for student use via both Academic Advising and faculty. It is essential, however, that the student fully understands that it is his/her responsibility to become knowledgeable about college policies and initiate the advisement process.

The student is responsible for the following:

1. being an active participant in the advising relationship.
2. meeting all graduation requirements.
3. maintaining personal records of academic progress and resolving any discrepancies on the official grade reports.
4. becoming knowledgeable about college regulations, program requirements and procedures.
5. meeting with his/her advisor as often as necessary to keep the advisor informed about changes in progress, course selection, career goals and registration.
6. seeking sources of information, which will assist him/her in making educational/career/life decisions.
7. contacting the advisor when confronted with major academic problems and for keeping the advisor aware of other problems that may affect his/her academic performance.

Academic Advising

Selecting a program of study and appropriate college courses may be one of the most important tasks in the college experience. The choices students make will greatly influence their satisfaction with the college, performance in classes, persistence in college, graduation, and entrance into careers and four-year colleges or universities. Advisors are available to assist students with these decisions and provide information regarding policies and procedures at LCCC. Students who are experiencing academic difficulty are strongly encouraged to meet with an advisor or counselor to discuss options and strategies to increase success.

Career Exploration

The career decision-making process is an integral part of the college experience for many students. Examining values, clarifying interests, and identifying skills are important steps for students to take to make the best decisions possible for their future. Advisors and counselors are available to assist students with the preliminary steps in this process. For students who are having difficulty or would like more in-depth assistance, counselors are available to provide further guidance, assessment, and support. Computer assessment and inventories are available for all students.

Noncredit to Credit Career Pathways

Lehigh Carbon Community College offers an extensive range of programs which provide an opportunity for individuals to begin their college experience in short-term training programs. Typically these noncredit programs range from one month to a year in duration and provide instruction allowing individuals to ramp up their academic skills or earn industry-recognized credentials. Career pathways can open the door to entry-level employment in a high priority career area. These areas include:

- Health Care Industry
- Hospitality Industry
- Manufacturing Industry

In several cases, the credentials earned will count towards credit programs.

For example: Healthcare Administrative Assistant to Medical Assistant A.A.S., Health Information Technology A.A.S or Medical Billing and Coding

Production Technician to Industrial Electrical, Mechanical, Mechatronics, and Automation certificate to related Electrical Technology A.A.S., Mechanical Technology A.A.S. or Industrial Automation A.A.S. degree programs

Please contact our Career Pathways office for additional programs and information at 610-799-1574.

Career Development Center

The Career Development Center (CDC) at Lehigh Carbon Community College is committed to empowering students to develop career management skills to support attainment of their professional goals. Through development of partnerships with employers and the LCCC community, CDC staff provides career exploration, experiential learning opportunities, job preparation assistance and other career related resources to inspire success. Professional staff are available to provide one-on-one assistance in resume and cover letter writing, job-search strategies, interviewing skill development, and identifying job and internship opportunities. Throughout the year, employers are invited to the campus and centers for recruitment events, interview days and job fairs. The Career Development Center staff works with employers to develop job and internship opportunities for students and alumni. The Career Development Center provides online job listings and a resume referral service, both of which can be accessed through the LCCC Cougar CLAW at <https://lccc-csm.symplicity.com/students>. The job listings posted in the Career Development Center are continuously updated on the CLAW website. Students or alumni of LCCC in need of career development services should call 610-799-1090.

Early Learning Center - Child Care

The Early Learning Center Lab School is accredited by the National Academy of Early Childhood Programs (NAECP), a division of the National Association for the Education of Young Children (NAEYC).

LCCC's Early Learning Center is a high-quality preschool which offers a secure, healthy environment designed to stimulate a natural love of learning through exploration and discovery. It proudly serves children of students, faculty, staff and the community (as space is available).

The center is licensed by the PA Department of Human Services and holds a Keystone STARS four rating by PA Keys to Quality. The Early Learning Center also serves as an educational lab site for Teacher Education and other departments of the college.

The Early Learning Center - Child Care is located on the Schnecksville campus. The director of the Early Learning Center can provide more information or schedule a visit. Please call 610-799-1165.

successful completion of the students' course of study. The KEYS program provides assistance and services to students who are enrolled at, or who have been approved to attend any of the 14 community colleges in Pennsylvania.

Tutoring is provided by professional and peer tutors in a variety of courses in the Educational Support Center at each site. Writing tutoring is also available through the ESC's online Digital Essay Tutor (DIGEST) using the student's LCCC email.

Students are eligible for additional support through a variety of grant-funded programs if they meet the financial and programmatic guidelines. These services may include the following:

- a structured environment to encourage learning;
- additional academic counseling;
- college skills workshops;
- financial assistance for child care;
- personal and social growth counseling;
- registration advisement; and
- study skills seminars.

Information regarding Educational Support Services may be obtained by calling the Educational Support Center at 610-799-1156.

Educational Support Services

Educational Support Services (ESS) provides a variety of free services for students to discover their individual academic skills and to become self-sufficient, independent, life-long learners. These services are offered in the Educational Support Center (ESC) on the Schnecksville Campus and college sites in Tamaqua, Jim Thorpe, and downtown Allentown. Smarthinking Online Tutoring Services are available to all students in many subject areas, 24 hours a day. Students can link to the services through their Learning Management System accounts.

Lehigh Carbon Community College's Disability Support Services Office provides access and academic accommodations for qualified students. A qualified student is one who meets the requisite programmatic standards, with and/or without accommodation, for admission or participation in college programs and/or activities. The student can find steps for requesting accommodations through Disability Support Services. Disability support services are provided at all LCCC sites. To meet the unique needs of students with disabilities, LCCC has also started a comprehensive, direct service program called SEED (Success, Engagement, Education, Determination). This program provides academic/career coaching, mentoring, soft/technical skills training, pre-vocational skills, and independent living strategies for future competitive employment. More information can be found on LCCC's website.

Career and Technical Education learning specialists offer workshops and individual assistance in learning styles and strategies, stress management, study skills, test-taking techniques, time management and organization, computer literacy, test anxiety, and education goal setting.

Keystone Education Yields Success (KEYS) grant facilitators offer services through the KEYS collaborative program between the Pennsylvania Department of Human Services and the Pennsylvania Commission for Community Colleges, designed to assist recipients of Temporary Assistance for Needy Families (TANF) attend Pennsylvania's community colleges and ensure the

Transfer Planning, Services and Agreements

More than half of the students attending LCCC intend to transfer to a four-year college or university after their community college experience. LCCC students find that they receive a quality program that prepares them well academically and socially for transfer to a four-year college or university. Lehigh Carbon Community College students are well-recognized and well-received by transfer institutions.

The A.A. and A.S. degree programs are designed for students interested in transferring to a four-year college or university. The courses in these programs closely parallel first- and second-year courses offered at four-year colleges and universities. With good planning and information gathering during their enrollment at LCCC, students with the A.A. or A.S. degree should be able to transfer full credit for the first and second year and enter a four-year college or university as a third-year student. If the student is planning to transfer into a specialized or technical field, e.g. music education or architecture, early transfer may be recommended.

The A.A.S. degree, while generally not designed for transfer students, may transfer for specific programs to a number of schools. For this reason, it is important that the student meet with an academic advisor or counselor early in their college career to review academic goals to determine the most appropriate program of study to meet those goals.

Students are encouraged to select a four-year college major and intended transfer institution as early in their LCCC career as possible. This enables students to select courses that will transfer and best fit their four-year programs of study.

The Transfer Center houses written and web-based information for students planning to continue their studies after LCCC including transfer agreements, course equivalency information, transfer letters of intent, and college and university resources and materials. Dedicated office space is available for four-year college and university admissions representatives, faculty and staff to meet with LCCC students in a confidential and professional setting for dual advising and academic admissions interviews. In addition, LCCC partners with, and provides office and classroom space, to several colleges and universities offering bachelor degree completion programs on site including Albright College and Bloomsburg University.

Lehigh Carbon Community College has established numerous articulation agreements that facilitate successful transfer. Dual admission agreements typically guarantee acceptance with junior standing at a college or university provided that certain criteria have been met, including earning a specified minimum GPA and an Associate in Arts or Associate in Science degree. Program-to-program agreements have been established to help ensure a seamless transfer from the associate degree into the junior year for such four-year college or university majors as Business Administration, Education and Engineering. Dual advising between LCCC and the four-year college or university is included in many of the specific articulation agreements. Course comparison guides specify course equivalences between LCCC and other colleges and universities, assisting in the selection of appropriate transferable courses.

Lehigh Carbon Community College has established transfer agreements and/or course equivalency information with more than 50 colleges and universities including, but not limited to, the following:

Albright College	Kutztown University
Alvernia University	Lafayette College
Arcadia University	Lehigh University
Bellevue University	Lincoln University
Bloomsburg University	Lock Haven University
Bucknell University	Mansfield University
California University of PA	Marywood University
Capella University	Millersville University
Carlow University	Misericordia University
Cedar Crest College	Moravian College
Central Penn College	Muhlenberg College
Chatham University	Wescoe School
Cheyney University	Peirce College
Clarion University	Penn College of Technology
Delaware Valley University	Penn State University
DeSales University	Reading Area Community College
Drexel University	Saint Francis College
East Stroudsburg University	Shippensburg University
Eastern Kentucky University	Slippery Rock University
Edinboro University of PA	Temple University
Excelsior College	University of Pittsburgh
Franklin University	Upper Iowa University
Geneva College	West Chester University
Harrisburg University	Wilkes University
Immaculata University	Wilson College
Indiana University of PA	
Keystone College	

For more information about transfer services, policies and agreements, go to www.lccc.edu/transferservices, or contact an academic advisor or counselor.

Reverse Transfer Agreements

Students transferring to another college or university before earning the associate degree are encouraged to transfer credits for applicable coursework back to LCCC to complete their degree requirements when possible. Reverse Transfer Agreements define the eligibility requirements and process between the student, the transfer institution, and LCCC. For more information contact an academic advisor.

Academic Passport and Student Transfer

Academic Passport has been created to promote and facilitate the seamless transfer of LCCC and other Pennsylvania community college students to the 14 state system universities. LCCC students who meet the eligibility criteria shall be granted Academic Passport to the following universities: Bloomsburg, California, Cheyney, Clarion, East Stroudsburg, Edinboro, Indiana, Kutztown, Lock Haven, Mansfield, Millersville, Shippensburg, Slippery Rock and West Chester.

LCCC students who earn the A.A. or A.S. degree in a transfer or college parallel program from an accredited Pennsylvania community college and who apply in accordance with the established university time frame shall have an Academic Passport that provides entry into any university in the Pennsylvania State System of Higher Education (PASSHE). Entry to the university does not guarantee entry to a specific major. The required GPA for specific majors will remain in effect. Within the A.A. or A.S. degree:

- Up to 45 community college credits shall be used to meet lower division PASSHE university general education requirements, even if the PASSHE university does not offer the specific course being transferred or has not designated that course as general education. A course-by-course match will not be required.
- The remaining credits will be used toward meeting the requirements of the major, and any remaining credits after the major will be used as electives.
- LCCC coursework must contain, as a minimum, 30 credits of liberal arts among the following fields of study: Composition/Communications, Humanities/Fine Arts, Behavior/Social Science, Biological/Physical Sciences and Mathematics/Computer Sciences.
- Occupational, vocational and career courses usually do not transfer. Courses in certain technical fields may transfer depending on the major.
- “D” grades transfer only if the overall GPA meets or exceeds 2.0 from each institution attended. PASSHE universities that require a grade of at least “C” for specific courses, such as courses in the major, will be permitted to do so.

More information about Academic Passport, including a question-and-answer sheet and copies of the official document, are available on the website at www.lccc.edu/transferservices. For additional information, contact an academic advisor or counselor.

Pennsylvania Statewide College Credit Transfer System

Transfer and Articulation Oversight Committee (TAOC)

The Transfer and Articulation Oversight Committee (TAOC) reports to the Pennsylvania Department of Education and is charged with establishing course equivalency standards, identifying foundation courses for transfer at each of the 14 PASSHE and 14 community college institutions; resolving conflicts related to any of the above processes; working with PDE to develop a system for reporting transfer data; and the development of a public portal, www.pacollegegetransfer.org, to share data and information relevant to transfer and articulation.

Transfer Credit Framework

The courses listed in the Transfer Credit Framework represent the type of coursework generally completed during the first and second year of a four-year degree program, including English, public speaking, math, science, social sciences and humanities. Completing courses according to the suggested framework is recommended for students who are undecided about the major they wish to pursue or the institution where they plan to transfer. A list of these courses and participating colleges and universities can be viewed at www.pacollegegetransfer.org.

Statewide Program-to-Program Agreements

Pennsylvania’s Public School Code of 1949 requires the colleges and universities that participate in the Commonwealth’s Statewide College Credit Transfer System to develop agreements that will allow students to transfer full Associate in Arts (A.A.) and Associate in Science (A.S.) degrees into parallel bachelor degree programs at the participating institutions with junior standing. LCCC students graduating from the following programs of study are eligible to participate provided they have met the stated requirements of the agreement: Fine Arts / Studio Arts, Biology, Business Administration, Chemistry, Communications, Computer Science, Criminal Justice, Early Childhood Education, Mathematics, and Physics. More information, including a list of LCCC’s statewide program-to-program agreements, can be viewed at www.pacollegegetransfer.org.

Academics



Allentown | Jim Thorpe | Schnecksville | Tamaqua | LVI Airport
Baum School of Art | Online

Start Here | **Go** Anywhere

Academic Programs

Academic programs at Lehigh Carbon Community College are divided into schools within the college. Five schools allow each student to identify with a school that meets his or her educational goals. Similar disciplines are linked to enhance communication among them and to provide each student with a comprehensive learning experience.

The A.A. and A.S. degree programs are designed for students interested in transferring to a four-year college or university. The courses in these programs closely parallel first- and second-year courses offered at four-year colleges and universities.

The programs provide considerable flexibility in course selection and allow students time to experience different academic disciplines before declaring a major at the baccalaureate level. With good planning and information gathering during enrollment at LCCC, the student with the A.A. or A.S. degree should be able to transfer full credit for the first and second year and enter a four-year college or university as a third-year student. For students planning to transfer into a specialized or technical field, e.g. architecture, early transfer may be recommended.

LCCC provides a number of transfer services, including that of academic advisors and counselors who assist students in developing transfer plans based on students' individual academic and career goals. The college has a number of transfer articulation agreements with outstanding four-year colleges and universities. Refer to the "Transfer Agreements and Services" section of this catalog and "Academic Advising Services" section of this catalog for additional information.

It is important to note that the responsibility belongs to the student for gathering information, utilizing college services, contacting four-year colleges or universities, and making decisions related to course work and transfer. Refer to the "Academic Advising" section of this catalog for more information on transfer services.

The A.A.S. degree programs are designed to prepare students for employment after graduation. The courses in A.A.S. degree programs provide knowledge, proficiency, and skills in a particular vocational, career, or technical area as well as instruction in general academic subjects. Although an A.A.S. degree is not designed for transfer, some graduates of these programs have continued their studies at four-year colleges or universities. Because of the technical nature of the courses required in these programs, many of the courses taken in an A.A.S. program may not transfer to four-year colleges or universities. Students in an A.A.S. program who may transfer should consult an academic advisor or counselor during their first semester at LCCC.

Certificate programs are designed to give the student an opportunity to become occupationally competent within a relatively short period of time or to accelerate advancement in a present position of employment. Credits earned in certificate programs can be applied toward the Associate in Applied Science degree.

Undecided students (UNDC) will be admitted to the Liberal Arts program until a major is declared.

Lehigh Carbon Community College reserves the right to make changes to tuition and fees, academic regulations, or programs of study.

SCHOOL OF **Business, Education, Legal and Social Services**

Associate in Applied Science degrees

Accounting (ACC)	58
Business Management (BMG).....	62
Criminal Justice Administration (CJA)	66
Early Childhood Education (ECE) Ψ	68
Early Childhood Education/Early Intervention (ECI) Ψ	71
Hotel Resort Management (HRE)	76
Human Resource Management (HMN)	77
Human Services (HUS) Ψ	79
Paralegal Studies (PLG) Ψ	83
Paraprofessional/Special Education (PAR) Ψ	85

Associate in Arts degrees

Business Administration (BUAA).....	61
Criminal Justice Administration (CJAA).....	65
Education (EDUA) Ψ	74
Social Work (SOWA)	86
Special Education (EDSA) Ψ	87

Associate in Science degree

Sport Management (SPMS).....	88
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Certificates

Accounting (ACCC).....	59
Administrative Assistant (ADMC)	60
Business Management (BMGC)	63
Corrections (CRRC)	64
Culinary Arts (CULC)	67
Early Childhood Education/Early Intervention (ECIC)Ψ	72
Human Resource Management Certificate (HMNC)	78
Law Enforcement Certificate (LAWC).....	81
Medical Billing Specialist Certificate (MBSC)	82
Paralegal Studies Certificate (PLGC) Ψ	84

Specialized Credit Diplomas

Early Childhood Education Director (ECDD) Ψ	69
Early Childhood Education (ECED) Ψ	70
Early Childhood Education/Early Intervention (ECID) Ψ	73
Entrepreneurship and Small Business (ENBD).....	75
Infant-Toddler CDA Prep (ECTD) Ψ	80

Ψ Special Admission Program Requirements

Additional admission information and requirements for specific programs are identified on page 14 to page 19.

SCHOOL OF **Communication Arts, Computers and Technology**

Associate in Applied Science degrees

Applied Technical Studies (ATS).....	89
Aviation Science (AVS)	90
Computer Specialist – Network Technology (CST)	99
Computer Specialist – Programming Concentration (CSP).....	100
Computer Specialist – Web Design and Development (CSW)	101
Computer-Generated Animation and Digital Arts (CGA)	96
Construction Management (COM).....	102
Construction Technology (COT)	103
Drafting and Design (DRF).....	105
Electrical Engineering Technology (EET).....	106
Electrical Technology (ELT)	107
Electronics Technology (ELE).....	110
Geospatial Technology (GIS)	114
Heating, Air Conditioning and Refrigeration (HVACR) Technology (HAC).....	116
Industrial Automation (INR)	118
Kitchen and Bath Design (KBD)	120
Mechanical Engineering Technology (MEC)	121
Mechanical Technology (MET)	122
Nanofabrication Technology (NMT).....	124
Professional Pilot (AVP) Ψ	125

Associate in Arts degrees

Communication (CMMA)	92
Computer Game and Simulation Development – Digital Arts Track (CGSA).....	94
Fashion Design (FSDA).....	111
Fine Arts/Studio Arts (ARTA).....	112
Graphic Design (GRDA).....	115
Music/Sound Production (DAPA)	123
TV/Film (DVPA)	126

Associate in Science degrees

Computer Forensics and Digital Security (CFSS)	93
Computer Game and Simulation Development – Programming Track (CGPS)	95
Computer Information Systems (CSIS)	98
Computer Science (CISS)	98

Certificates

Construction Technology Certificate (CONC)	104
Electrical Technology Certificate (ELTC)	108
Electronics Certificate (ELEC)	109
Geographic Information System Certificate (GIS)	113
Heating, Air Conditioning and Refrigeration (HVACR) Technology Certificate (HACC).....	117
Industrial Automation Certificate (INRC)	119
Tool and Die Machinist Apprenticeship Certificate (TOLC)	127

Diploma

Cisco CCNA Diploma (CNAD)	91
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SCHOOL OF **Health Care Sciences**

Associate in Applied Science degrees

Dental Hygiene	128
Health Information Technology (HIT)	129
Medical Assistant (MED) Ψ	130
Medical Laboratory Technician in cooperation with Montgomery County Community College	131
Medical Laboratory Technician in cooperation with Reading Area Community College	132
Nursing (ADN) Ψ	133
Occupational Therapy Assistant (OTA) Ψ	134
Physical Therapist Assistant (PTA) Ψ	135
Respiratory Care in cooperation with Reading Area Community College	137

Certificate

Practical Nursing Certificate (NURC) Ψ	136
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SCHOOL OF **Humanities and Social Sciences**

Associate in Arts degrees

General Studies (GSAA).....	138
Liberal Arts (LIBA)	139

Associate in Science degree

Psychology (PSYS)	140
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SCHOOL OF **Science, Engineering and Mathematics**

Associate in Applied Science degrees

Chemical Technology (CHT)	143
Veterinary Technician (VET) Ψ	151

Associate in Science degree

Biology (BIOS).....	142
Chemistry (CHMS).....	144
Engineering (EGRS)	145
Environmental Science (ENVS).....	146
Exercise Science (EXSS).....	147
Health Science (HSCS).....	148
Mathematics (MATS)	149
Physics (PHYS)	150

Ψ Special Admission Program Requirements

Additional admission information and requirements for specific programs are identified on page 14 to page 19.

Online Courses

An online course is a complete and integrated learning program accessed via a computer from home, office, or on the college campus. The course includes instructor notes, textbook(s), Internet links, and remote access to the library as well as a variety of other multimedia materials designed to be used by students and faculty as the principal components of a credit college course. Online courses require that students have access to a computer, the Internet via an Internet Service Provider (ISP), college email address, and basic computer, Internet and email skills. Computer specifications are provided on LCCC's website. WebStudy is currently the learning management system used for all online courses at LCCC. A small sample online course is available at <http://lccc.webstudy.com> (username: lcccstudent, password: orientation). Upon registration for an online course, the Director of Registration/Student Records will send a message to your student email account with log-on instructions. Fifteen (15) week online courses are identified in the course listings by the use of "N1" or "N2" as the section number for full-term semester courses (for example, BIO-124-N1), 5N for the ten (10) week Fall and Spring courses, 3N for the ten (10) week summer courses, 2N for the first five (5) weeks of a summer semester; and 4N for the second five (5) weeks of a summer semester (for example, BIO-124-4N).

Online Education

Lehigh Carbon Community College provides convenient and affordable online courses and programs for students who wish to start, enhance, or supplement their education. By choosing from a wide variety of online courses, students may earn one of the following degrees, certificates, or specialized credit diplomas from the convenience of home or office.

Tuition and fees for online education courses are the same as for on-campus LCCC courses.

The following programs are online.

Associate Degrees

- Accounting A.A.S.
- Business Administration A.A.
- Business Management A.A.S.
- Criminal Justice Administration A.A.S.
- Education A.A.
- General Studies A.A.
- Human Resource Management A.A.S.
- Liberal Arts A.A.
- Paraprofessional/Special Education A.A.S.
- Special Education A.A.

Certificates and Specialized Credit Diplomas

- Accounting Certificate
- Administrative Assistant Certificate
- Business Management Certificate
- Corrections Certificate
- Entrepreneurship and Small Business Specialized Credit Diploma
- Human Resource Management Certificate
- Law Enforcement Certificate

80% or more of the courses are online.

- Criminal Justice Administration A.A.
- Early Childhood Education A.A.S.
- Health Information Technology A.A.S.
- Psychology A.S.

Some courses may require occasional visits to campus for proctored exams or other course requirements. Instructors are prepared to discuss alternate arrangements for students who need accommodations. Online education occurs while the instructor and student are separated by time, distance, or both (synchronous or asynchronous). It may utilize video, audio, computer, multimedia communications, or some combination of these methods with traditional ones. The material covered in online education courses is equivalent to LCCC's on-campus courses. The quality and comprehensiveness of each course is thoroughly evaluated before being offered to students. The main differences between online education courses and on-campus courses are location and delivery method. The quality and content of online education courses are identical to courses taught on campus in the classroom, and the courses typically transfer identically as on-campus classes. Online education faculty teaching these courses are the same faculty who teach on campus and offer the same quality and direction as that provided in the classroom. Tuition and fees for online education courses are the same as for on-campus LCCC courses. The courses appear on transcripts as sections of regular LCCC courses.

Admission and registration procedures for these courses are the same as for on-campus courses. Applicants submit an application for admission to Registration/Student Records, meet the standard entrance requirements of the college, and must be formally admitted to the college to register for any credit courses. Online education courses are offered as either hybrid or online courses. Each type of course provides different advantages and requires different technology and study skills. Online education requires students to be self-directed, independent learners. LCCC's faculty are available for personal appointments, telephone contact, email communication, or online chats. Although students may work at the time of day most convenient for them, they must still meet deadlines and participation requirements.

Honors Projects and Sections

Students with a 3.0 GPA may enroll in Honors Sections or complete Honors Projects in their courses. Students in the College Honors program are required to complete five courses with Honors grades.

Honors Projects

Honors Projects can be completed in almost every class at LCCC.

Students work directly with the instructor of the course to develop an honors project. This project is completed in addition to the work required in the class. Applications to complete an Honors Project are available in the Advising Office on Main campus (SSC124).

Honors Courses

Honors courses are sections of classes that are taught at an honors level. Honors sections do not necessarily mean more work, rather students are expected to complete work at a higher level and with a deeper understanding of the material. The basic course information is the same as all other sections of the course, but in the honors course the teacher may pick a theme to tie everything together, or spend more time on real-world applications of the course material. Honors courses change each semester and are listed on the course schedule.

Learning Communities

LCCC's definition of a Learning Community is simple—bringing innovative and caring faculty, students, and curriculum together to promote a deeper level of learning.

The primary model of Learning Communities is the linking of two courses and two instructors with the same group of students around an interdisciplinary theme. The linking of courses can occur between two courses within a major, with general elective courses, or a combination of both.

For more information and advisement, contact the Teaching Learning Center at 610-799-1087.

Graduation Requirements

Selection of courses applicable for graduation requirements is the responsibility of the student. Academic advisors and counselors are available to help students make course selections.

The general graduation requirements are as follows:

1. Students in the A.A., A.S. and A.A.S. degree programs must successfully complete at least 60 credits in an approved program of study, of which 15 credits must be taken at LCCC through course enrollment.
 - a. Students in certificate programs must complete an approved program of study of at least 30 credits in courses numbered 101 or higher, of which at least 25% of the credits are taken at LCCC through course enrollment.
 - b. Students in diploma programs must complete an approved program of study of at least 9 credits in courses numbered 101 or higher, of which at least 25% of the credits are taken at LCCC through course completion, except where diploma requirement is 100% of the credits are taken at LCCC through course completion.
2. The student must attain at least a 2.0 cumulative GPA. Courses with "F" grades will not count toward degree requirements.
3. Courses numbered 100 or lower do not count toward graduation requirements.
4. All general education courses must be courses numbered 101 or higher.
5. A course may not be taken to fulfill both a program requirement and an elective in any program of study.
6. Physical education courses may not be repeated for credit.
7. A student who has completed, with at least a "C," MAT 105, MAT 130, MAT 160, MAT 170 or MAT 191 will not receive credit toward graduation if subsequently enrolled in a lower numbered mathematics course from the previous list. Exceptions to this policy can be made only by the Associate Dean of Professional Accreditation and Curriculum.
8. The student must fulfill all financial obligations to the college.
9. A student interested in completing a second associate degree program at LCCC must complete at least 15 additional credits at LCCC beyond those required for the first associate degree.

In most degree, certificate and diploma programs, the courses required for graduation are listed specifically in the program description section of this catalog by title and course number. Other required courses, however, may not be specified by title and course number. These courses are called "electives" and may be unspecified (free electives), distributed among several areas of general education (social science/humanities electives), or limited to specific departments or disciplines (mathematics, science, business, electronics). Faculty may recommend specific courses to fulfill these elective courses. These recommendations may be found in the footnotes following the program description.

The "Course Description" section provides a short description of each course offered by the college. It also provides information on prerequisite and corequisite courses required for enrollment in specific courses. A prerequisite is a course or skill level that must be completed prior to enrollment in a specific course. A corequisite is a requirement that must be satisfied at the same time or before a specific course is taken. Students should consult the course description section of this catalog when choosing elective courses to ensure that all prerequisite and corequisite requirements are fulfilled.

Transfer students should also consult four-year college or university catalogs and transfer guides when choosing elective courses to enhance the transferability of credits.

Program Electives

Program electives are courses listed within a given degree program, which may be program specific or may not be major specific but are intended to further enhance a student's education in her or his chosen field. These courses may fall under a program-specific category, which is given a designated prefix within the program of study.

Required Program Electives - Program electives may be listed as required, which indicates that a student must choose from a stated list of courses to receive credit for the Program elective.

Recommended Program Electives - Program electives may be listed as recommended, which indicates that a student will best benefit by choosing from a stated list of courses.

Free Electives

Free electives are credit courses a student may choose to take to pursue a broader interest in any subject area, while still earning credit toward graduation. Free electives fulfill neither General Education requirements nor the program requirements. Students may choose any college-level course, numbered 101 or higher, to fulfill a free elective requirement, unless otherwise specified in a degree program.

General Education Electives

General Education electives are courses that promote intellectual habits to act intentionally in the world. These courses prepare people to think by identifying, framing and examining problems; generating, evaluating and selecting solutions; reflecting upon personal and others' experiences; testing ideas and opinions; reviewing practices; and evaluating conclusions (LCCC General Education Philosophy). General Education electives are selected from the disciplines of humanities, social sciences, mathematics and sciences.

General Education Electives:

CIS 105

CMN 101, 105, 112, 115, 201

ENG 111

*Humanities: (see below)

HPE 101, 106

Math: Any course 105 or higher

PED: Any course

Science: AST, BIO, CHE, PHY, SCI

**Social Sciences: (see right column)

English Electives

English electives are courses focused on analytical and critical skills related to reading and writing, and the examination of writing patterns that elicit an intellectual and emotional response. These courses encourage the development of writing skills in idea generation, informational literacy, use of logic and sound communication, as well as interpretive skills related to aesthetic sensibilities, social perspective and cultural awareness.

Humanities Electives

Humanities electives are focused on a recognition of the human condition, communicated via written and spoken word, that fosters a comprehensive awareness and perspective; the formation of critical judgments concerning various forms of art and expression; an understanding of the human capacity for reason and the history of experience; and evaluation of issues related to civic and ethical responsibilities and cultural sensitivities.

*Humanities Electives:

ART 101, 212

CMN 125

ENG 154, 201, 202, 205, 206, 210, 211, 215, 220, 227, 230, 232, 237, 238

GRM 101 and SPN 101 may be chosen for A.A.S.

degree only

HIS 123, 124, 126, 130, 131, 220, 222, 224, 225, 260

IDS 154, 214, 215

MUS 101, 105, 107

PHI 201, 203, 205, 210

World Language: ARB, ASL, CHN, FRN, GRM (105 or higher), SPN (105 or higher)

Mathematics Electives

Mathematics electives are courses that promote critical thinking, logic and quantitative reasoning skills.

Mathematics electives support quantitative problem solving in applied settings and often serve as prerequisites to other courses in which these skills are needed.

Science Electives

Science electives focus on scientific reasoning skills and concepts in the examination of three major areas of the natural world. These courses present theoretical knowledge and scientific empirical research processes of observation, experiments and hypothesis testing. A science elective must be chosen from the Astronomy (AST), Biology (BIO), Chemistry (CHE), Physics (PHY) or Science (SCI) department. If a student plans to transfer to a four-year college or university, he/she will need to take a four- to five-credit laboratory science course.

SCI 105 - This elective course is not appropriate for science majors.

Social Science Electives

Social Science electives are courses that examine disciplines which are theoretically based and employ scientific methods to study human conditions.

**Social Science Electives:

ECO 201, 202, 237

GEO 110, 115, 260

IDS 154, 214, 215

PSC 130, 141, 142, 233, 235, 236, 237, 239 260

PSY 120, 140, 142, 145, 240, 242, 243, 250, 255, 256, 257, 260, 283

SOC 150, 151, 154, 155, 250, 251, 253, 254, 257, 258, 260, 283

Studio Art Electives

Studio Art electives are an exploration of traditional and contemporary forms, processes, techniques, and experiences of making art. Through historical and aesthetic perspectives, Studio Art electives provide the opportunity to design and create art projects that integrate all learned techniques in order to successfully communicate conceptual ideas through visual language.

ART 102, 107, 108, 109, 110, 112, 115, 118, 119, 120, 125, 128, 130, 132, 135, 145, 150, 152, 155, 181, 205, 206, 210, 215, 215, 220, 225, 226, 230, 235, 242, 247, 248, 251, 252, 260

Programs of Study



Allentown | Jim Thorpe | Schnecksville | Tamaqua | LVI Airport
Baum School of Art | Online

Start Here | Go Anywhere

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Accounting A.A.S. (ACC)

The Accounting Associate Degree program is accredited by the Accreditation Council of Business Schools and Programs (ACBSP).

This career program is designed to provide students with the necessary skills for entry level accounting positions in such areas as accounts receivable, accounts payable, payroll and purchasing. Or, use this program as a starting point to pursue a Bachelor's Degree and look forward to career opportunities in corporate accounting, public accounting and auditing, non profit and government accounting, tax and consulting services.

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

- describe and illustrate basic financial accounting concepts and principles.
- create and utilize management accounting information for decision-making purposes.
- demonstrate the accounting and reporting of equity in a business.
- demonstrate effective communication.
- apply accounting concepts and principles for preparing and analyzing financial statements and business operations.
- apply financial and cost accounting principles and procedures to a manufacturing business.
- demonstrate and integrate computer literacy within an accounting framework.
- recognize ethical problems in business.
- apply legal principles, particularly rules of contracts, to all business activities.

First Semester		Credits
ACC 160	Principles of Accounting I	3
BUS 120	Introduction to Business Organization	3
ENG 105	Research and Composition	3
CIS 105	Introduction to Computers and Applications	3
Elective	Mathematics	3-4
		15
Second Semester		
ACC 161	Principles of Accounting II	3
ACC 205	Income Tax Accounting	3
BUS 211	Principles of Management	3
ENG 106	Introduction to Literature	
or ENG 107	Writing in the Workplace	3
or ENG 108	Creative Nonfiction	3-5
Elective	Mathematics/Science	3-5
		15-17
Third Semester		
ACC 201	Intermediate Accounting I	3
ACC 203	Cost/Managerial Accounting	3
BUS 209	Business Communications	3
BUS 221	Principles of Marketing	3
PSY 140	Introduction to Psychology	
or SOC 150	Introduction to Sociology	3
		15
Fourth Semester		
ACC 202	Intermediate Accounting II	3
ACC 262	Accounting Information Systems	3
BUS 241	Business Law I	3
BUS 285	Global Business Practice Firm	
or BUS 284	Business Internship (Accounting Option)	4-6
Elective	Social Science/Humanities	3
		16-18
Credit Total		61

Recommended elective for first semester is MAT 118.

Recommended electives for second semester are MAT 155 and 160.

Recommended Social Science electives are ECO 201 and 202.

AOT 112 is recommended but not required.

Students planning to transfer to a senior college or university to major in accounting should enroll in the Business Administration A.A. transfer program, take ACC 160 and 161, and meet with an advisor before taking advanced-level accounting courses.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Accounting Certificate (ACCC)

This program will provide students with accounting skills necessary to obtain entry-level positions in business as an accounts payable clerk, accounts receivable clerk, purchasing clerk or as a bookkeeper. Credits may be applied toward the A.A.S. degree in Accounting.

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

- describe and illustrate basic financial accounting concepts and principles.
- create and utilize management accounting information for decision-making purposes.
- demonstrate the accounting and reporting of equity in a business.
- apply accounting concepts and principles for preparing and analyzing financial statements and business operations.
- apply financial and cost accounting principles and procedures to a manufacturing business.
- demonstrate and integrate computer literacy within an accounting framework.
- recognize ethical problems in business.
- apply legal principles, particularly rules of contracts, to all business activities.

First Semester		Credits
ACC 160	Principles of Accounting I	3
BUS 120	Introduction to Business Organization	3
CIS 105	Introduction to Computers and Applications	3
		<hr/> 9
Second Semester		
ACC 161	Principles of Accounting II	3
ACC 205	Income Tax Accounting	3
		<hr/> 6
Third Semester		
ACC 201	Intermediate Accounting I	3
ACC 203	Cost/Managerial Accounting	3
BUS 209	Business Communications	3
		<hr/> 9
Fourth Semester		
ACC 202	Intermediate Accounting II	3
ACC 262	Accounting Information Systems	3
BUS 241	Business Law I	3
		<hr/> 9
Credit Total		33

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Administrative Assistant Certificate (ADMC)

The program is designed to prepare the student for entry-level employment in today's business office. It provides students with the secretarial knowledge and skills for employment in a variety of industries. Jobs for which graduates are expected to be qualified include secretary, administrative assistant, and office assistant.

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

- perform clerical and office technology tasks at an intermediate level of competency.
- manage a business environment or work independently in a modern office environment.
- communicate and interact with members of the management team.
- qualify for advanced training in the management field.
- sit for the CPS and/or CAP examination.

First Semester (fall)		Credits
{ AOT 112*	Keyboarding I	1
{ AOT 113*	Keyboarding II	1
{ AOT 114*	Keyboarding III	1
or AOT 115*	Typing I	3
AOT 206♦	Office Procedures	3
BUS 209	Business Communications	3
BUS 120	Introduction to Business Organization	3
CIS 105	Introduction to Computer Science and Applications	3
		<hr/> 15
Second Semester (spring)		
{ AOT 117*	Keyboarding IV	1.5
{ AOT 118*	Keyboarding V	1.5
or AOT 116*	Typing II	3
ACC 160	Principles of Accounting I	3
IDS 105	Thinking, Problem Solving, and Team Building	3
Electives ⁺	ACC, AOT, BUS, CIS, PLG, or RES	6-7
		<hr/> 15-16
Credit Total		30

*Placement testing is available for AOT 112, 113, 114, 115, 116, 117, and 118 (Keyboarding/Typing sequence).

♦Students completing this program online should take AOT 206 in the spring semester.

⁺Recommended electives include ACC 161 and 262; and BUS 241.

Some courses may be used to build toward an A.A.S. degree in Business Management.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Business Administration A.A. (BUAA)

The Business Administration Associate Degree program is accredited by the Accreditation Council of Business Schools and Programs (ACBSP).

Designed to prepare graduates to continue their studies in accounting, economics, management, finance, insurance, marketing, or business administration at a four-year college or university.

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

- demonstrate effective written communication.
- apply fundamental accounting principles and procedures.
- create and utilize management accounting information for decision-making purposes.
- recognize leadership and management skills, and standard management procedures.
- apply legal principles, particularly rules of contracts, to all business activities.
- demonstrate how supply and demand drive a market economic system.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester

		Credits
CIS 105	Introduction to Computers and Applications	
or CIS 155	Introduction to Computer Science – Structured Programming – C++	3-3.5
ACC 160	Principles of Accounting I	3
BUS 211	Principles of Management	3
ENG 105	Research and Composition	3
Elective	Humanities	3
		15-15.5

Second Semester

ACC 161	Principles of Accounting II	3
BUS 221	Principles of Marketing	3
ENG 106	Introduction to Literature	3
MAT 150	Introduction to Probability and Statistics	
or BUS 150	Business Statistics	3-3.5
Elective	Humanities/Social Science	3
		15-15.5

Third Semester

ACC 203	Cost/Managerial Accounting	3
BUS 241	Business Law I	3
ECO 201	Principles of Macroeconomics	3
ENG 111	Speech	3
Elective	Laboratory Science	4-5
		16-17

Fourth Semester

BUS 256	International Business	
or ECO/PSC237	International Relations	3
ECO 202	Principles of Microeconomics	3
MAT 188	Business Calculus	
or MAT 191	Calculus & Analytic Geometry I	3-4
Electives	Free Electives	6
		15-16

Credit Total 61

Students should consult four-year colleges regarding transferability of courses in this program. Transfer information is available on the LCCC website. For more information, contact an academic advisor.

Credit will not be given towards graduation requirements for both MAT 150 and BUS 150.

Recommended electives are BUS 120, 246, and 252.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Business Management A.A.S. (BMG)

The Business Management Associate Degree program is accredited by the Accreditation Council of Business Schools and Programs (ACBSP).

This program is designed to provide the student with a knowledge of general business procedures and other areas which will contribute to preparation to enter business as an owner, assistant manager, or supervisor trainee.

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

- describe the business enterprise concept, including ethical considerations.
- produce conventional written business communications.
- recognize supervisory skills and standard management procedures.
- apply fundamental accounting principles and procedures.
- apply legal principles, particularly rules of contracts, to all business activities.
- demonstrate and integrate computer literacy.
- apply critical thinking, team building, and problem-solving skills.
- recognize the impact of business decisions in both domestic and global environments.
- apply management, accounting, and computer skills either in an internship or a simulated business environment.

First Semester		Credits
BUS 120	Introduction to Business Organization	3
ACC 160	Principles of Accounting I	3
ENG 105	Research and Composition	3
CIS 105	Introduction to Computers and Applications	3
AOT 112* or AOT 115*	Keyboarding I Typing I	1-3
Elective ⁺	Mathematics	3-4
		16-18
Second Semester		
ACC 161	Principles of Accounting II	3
BUS 221	Principles of Marketing	3
ENG 107**	Writing in the Workplace	3
IDS 105	Thinking, Problem Solving, and Team Building	3
Elective [◆]	Free Elective	1-3
		13-15
Third Semester		
BUS 209	Business Communications	3
BUS 211	Principles of Management	3
BUS 241	Business Law I	3
ECO 201	Principles of Macroeconomics	3
Elective [◆]	Free Elective	3
		15
Fourth Semester		
BUS 252	Human Resource Management	3
BUS 284	Business Internship	
or BUS 285	Global Business Practice Firm	4-6
ECO 202	Principles of Microeconomics	3
CIS 110	Business Information Systems	3.5
Elective	Science	3-5
		16.5-20.5
Credit Total		60.5

*Placement testing is available for AOT 112, 113, 114, 115, 116, 117, and 118 (Keyboarding/Typing sequence).

**Or ENG 106 for those who wish to transfer.

⁺Recommended math electives:
MAT 118, 150, 155, and 160.

[◆]Recommended electives: Any AOT; any BUS; ACC 203, 205; CIS 111; ENG 111; PSY 142.

Credit will not be given toward graduation requirements for both MAT 150 and BUS 150.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Business Management Certificate (BMGC)

This program introduces students to various aspects of business management and will qualify them to obtain entry-level management positions as management-trainees or to become business owners. Credits may be applied toward the A.A.S. degree in Business Management.

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

- describe the business enterprise concept, including ethical considerations.
- produce conventional written business communications.
- recognize supervisory skills and standard management procedures.
- apply fundamental accounting principles and procedures.
- apply legal principles, particularly rules of contracts, to all business activities.
- demonstrate and integrate computer literacy.

Summer		Credits
AOT 112*	Keyboarding I	1-3
or AOT 115*	Typing I	
CIS 105	Introduction to Computers and Applications	3
BUS 120	Introduction to Business Organization	3
		7-9
First Semester (fall)		
ACC 160	Principles of Accounting I	3
BUS 209	Business Communications	3
BUS 211	Principles of Management	3
Elective**	Free Elective	3
		12
Second Semester (spring)		
ACC 161	Principles of Accounting II	3
BUS 221	Principles of Marketing	3
BUS 241	Business Law I	3
BUS 252	Human Resource Management	3
		12
Credit Total		31

*Placement testing is available for AOT 112, 113, 114, 115, 116, 117, and 118 (Keyboarding/Typing sequence).

**Recommended electives: Any AOT; any BUS; CIS 110, 111; ENG 105, 111; MAT 118 or higher level math course; PSY 142.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Corrections Certificate (CRRC)

The primary purpose of this program is to accommodate in-service officers interested in a specialized field. All courses in this program can be applied to an Associate in Applied Science degree in Criminal Justice Administration. Pre-service students are also eligible to enroll. Specific career opportunities include corrections officer, human services aide, residential juvenile counseling, street outreach counseling, and juvenile corrections aide.

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

- demonstrate a thorough understanding of the functions of the criminal justice system.
- demonstrate an understanding of the functions of corrections and how corrections relate to the entire criminal justice system.
- develop historical perspective of the principles, theories, and challenges inherent in corrections.

Courses		Credits
CJA 101	Introduction to the Criminal Justice System	3
CJA 116	Corrections Administration	3
CJA 119	Juvenile Justice	3
CJA 201	Criminal Evidence and Court Procedure	3
CJA 225	Probation and Parole	3
CJA 240	Criminal Law	3
PSY 140	Introduction to Psychology	3
SOC 151	Modern Social Problems	3
or SOC 250	Criminology	3
Electives*	Free Electives	6
		<hr/>
Credit Total		30

*Recommended electives: ENG 105, 107, and ENG 111.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Criminal Justice Administration A.A. (CJAA)

The purpose of this transfer program is to provide knowledge about the management, organization, and operation of the criminal justice system with emphasis on law enforcement and correctional agencies. In conjunction with a study of the entire criminal justice system, the student may elect law enforcement or corrections courses, depending upon his/her career objectives.

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

- describe and explain the functions of law enforcement, the courts, and corrections.
- analyze how law enforcement, courts, and corrections function as components of a criminal justice system.
- describe and explain the historical perspective of the principles, theories, and challenges inherent in the criminal justice system.
- describe, explain, and analyze the legal and ethical issues in criminal justice and juvenile justice.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CJA 101	Introduction to Criminal Justice System	3
CJA 116	Corrections Administration	3
ENG 105	Research and Composition	3
SOC 150	Introduction to Sociology	3
ENG 111	Speech	3
		15
Second Semester		
CJA 119	Juvenile Justice	3
ENG 106	Introduction to Literature	3
PSY 140	Introduction to Psychology	3
Elective*	Mathematics	3-4
Elective+	Laboratory Science	4-5
		16-18
Third Semester		
CJA 201	Criminal Evidence and Court Procedure	3
CJA 215	Law Enforcement and Society	3
PSC 130	Introduction to Political Science	3
Elective♦	Humanities	3
Elective+	Laboratory Science	4-5
		16-17
Fourth Semester		
CJA 234	Ethics in Criminal Justice	3
SOC 250	Criminology	3
Elective*	Mathematics	3-4
Elective♦	Humanities	3
Elective♦	Humanities	3
		15-16
Credit Total		62

*Mathematics Electives must be selected from this list:
 MAT 105, 120, 125, 126, 150, 155, 160, 165, 170, 191, 196.

+Lab Science Electives must be selected from this list:
 BIO 101, 105, 110, 111, 163, 164, CHE 105, 106, 108, 111, 112, PHY 101, 103, 201, 202, 210, 215.

♦Humanities Electives must be selected from this list:
 ART 101, ENG 154, 201, 202, 205, 206, 210, 211, FRN 105, 106, GRM 105, 106, MUS 101, PHI 201, 205, SPN 105, 106.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Criminal Justice Administration A.A.S. (CJA)

The purpose of this program is to provide knowledge about the management, organization, and operation of the criminal justice system, with emphasis on law enforcement and correctional agencies. In conjunction with a study of the entire criminal justice system, the student may elect enforcement or correction courses, depending upon his or her objective.

Graduates of the program may qualify for employment in local, state, and some federal law enforcement and corrections agencies, or continue their education at a four-year college or university.

Jobs for which graduates are expected to be qualified include local and county police officer, state trooper, police detective, federal and state security officer, liquor control agent, drug enforcement officer, private detective, commercial and retail security officer, and corrections officer.

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

- describe and explain the functions of law enforcement, the courts, and corrections.
- analyze how law enforcement, courts, and corrections function as components of a criminal justice system.
- describe and explain the historical perspective of the principles, theories, and challenges inherent in the criminal justice system.
- describe, explain, and analyze the legal and ethical issues in criminal justice.

First Semester		Credits
CJA 101	Introduction to the Criminal Justice System	3
CJA 105 or CJA 116	Criminal Investigations Corrections Administration	3
ENG 105	Research and Composition	3
SOC 150	Introduction to Sociology	3
ENG 111	Speech	3
		15
Second Semester		
CJA 119	Juvenile Justice	3
ENG 106 or ENG 107	Introduction to Literature Writing in the Workplace	3
PSY 140	Introduction to Psychology	3
Elective	Criminal Justice Administration	3
Elective	Mathematics/Science	3-5
		15-17
Third Semester		
CJA 215 or CJA 225	Law Enforcement and Society Probation and Parole	3
CJA 240	Criminal Law	3
PSC 141 or PSC 235	American Federal Government Constitutional Law	3
SOC 151	Modern Social Problems	3
Elective	Mathematics/Science	3-5
		15-17
Fourth Semester		
CJA 201	Criminal Evidence and Court Procedure	3
PSC 142	State and Local Government	3
SOC 250	Criminology	3
Electives	Criminal Justice Administration	6
		15
Credit Total		60

CED 272 may be taken for degree credit in this program.

Students wishing to qualify for employment in law enforcement should take CJA 105 and 215. Students wishing to qualify for employment in corrections agencies should take CJA 116 and 225.

Students wishing to transfer to a four-year college or university should take ENG 106.

Students should consult four-year college or university catalogs for the transferability of suggested CJA electives.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Culinary Arts Certificate (CULC)

The program focuses on sustainable or farm-to-table culinary arts skills, with a focus on local sourcing and farm-fresh ingredients. Students participating in a year-long, 32-credit Culinary Arts Certificate program.

The culinary Arts program is to prepare people with the professional culinary knowledge to enjoy successful, long-term careers in the hospitality/food service industry. Students who complete the program will be able to continue studies in Hospitality Management, Culinary Arts, Pastry Arts and Gastronomy at an accredited college or university.

This career program is designed to provide students with the skills demanded by a culinary arts position in the hotel, restaurant or foodservice industry. Students receive classroom and practical applications instruction in a kitchen facility. Typical jobs for which graduates of this program are expected to be qualified include line cook, prep cook, executive steward, kitchen manager, sous chef and a variety of other foodservice management positions. Upon completion of the program, qualified graduates are hired by hotels, restaurants and institutional foodservice facilities.

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

- demonstrate behaviors characterizing and defining hospitality professionals.
- apply technical knowledge associated with hospitality professionals in food service organizations
- explain sustainable stewardship and describe how to apply this principle to food service organizations.

Fall Semester (first seven weeks)		Credits
CUL 105	Culinary Foundations	3
CUL 115	Culinary Techniques	3
HRM 120	Purchasing for the Hospitality Industry	3
		<hr/> 9
Fall Semester (second seven weeks)		
HRM 131	Sanitation	2
CUL 120	Meat & Seafood Identification	3
CUL 125	Garde Manger	3
		<hr/> 8
Winter Session (online)		
BUS 248	Essentials of Entrepreneurship and Small Business	3
		<hr/> 3
Spring Semester (first seven weeks)		
CUL 130	Baking Fundamentals	3
CUL 231	International Cuisines	3
CUL 235	American Regional Cuisines	3
		<hr/> 9
Spring Semester (second seven weeks)		
CUL 250	Culinary Arts Practicum	3
		<hr/> 3
Credit Total		32

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Early Childhood Education A.A.S. (ECE)

The Early Childhood Education Associate Degree program is accredited by the National Association for the Education of Young Children (NAEYC).

The Early Learning Center Lab School is accredited by the National Academy of Early Childhood Programs (NAECP), a division of the National Association for the Education of Young Children (NAEYC).

This program prepares the graduate to work with children aged birth through nine. Students who complete the AAS in ECE are qualified as a group supervisor or head teacher in an early care and education program, including Head Start classrooms and childcare centers with children in infant/toddler, preschool or school-age care. With additional experience, graduates can be qualified to be center directors. Students who transfer to four-year colleges work towards Pre-K to fourth grade teacher certification for employment in early childhood or elementary school settings.

Students seeking to transfer and interested in seeking teaching certification must consult with an advisor or counselor to select electives very carefully in accordance with the general education and/or preprofessional requirements of the four-year college or university to which students intend to transfer are highly recommended to:

1. Identify transfer institution early and carefully follow advisor, college catalog, college web page along with transfer agreement.
2. Maintain a GPA of 3.0 or higher
3. Successfully take the PAPA exam in order to transfer.
4. Maintain a credential portfolio which includes clearances such as child abuse, state police, FBI and health clearances.
5. Document all observations and experiences.
6. Engage in Professional Community Engagement and Advocacy-TESA-Teacher Education Student Association (Kappa Delta Pi-Teacher Education Honor Society).
7. Successfully complete six credits in math and immediately take PAPA exam.

Note: Elective courses numbered 101 or higher—any credit course numbered 101. However, transfer students must refer to advisement #1 to ensure transfer of course and credits.

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

- summarize patterns of child growth and development in children ages 9 and under.
- utilize appropriate regulations and best practices to design and implement a quality early childhood environment.
- connect theories of learning and developmentally appropriate practice to create and implement quality curriculum units for early childhood classrooms.
- formulate a plan for supporting collaborative family relationships.
- summarize the role of advocacy for the early childhood profession.
- demonstrate proper supervision of children in early education classrooms.

First Semester		Credits
ENG 105	Research and Composition	3
ECE 110	Fundamentals of Early Childhood Education	3
ECE 120* or ECE 125*	Children's Growth and Development Education and Care of Infants and Toddlers	3
MAT 125	Fundamentals of Mathematics I	3
Elective	Political Science, Psychology, or Sociology	3
		15
Second Semester		
ENG 106	Introduction to Literature	3
ECE 130*	Integrating the Arts and Play in Early Childhood	3
ECE 140*	Observation and Recording Techniques	3
EDU 105	Introduction to Special Education	3
MAT 126	Fundamentals of Mathematics II	3
		15
Third Semester		
ECE 210*	Integrating Curriculum in Early Childhood	3
ECE 215*	Language and Literacy	3
Elective	History or Geography	3
Elective	Lab Science	4-5
Elective	American/British Literature	3
		16-17
Fourth Semester		
ECE 220	Internship	6
ECE 225	The Early Childhood Professional	3
Elective	Humanities	3
Elective	General Education	3
		15
Credit Total		61

Teacher Education Advisement guidelines for students seeking a teaching career and/or program of study for transfer into a four-year college program.

Students can select and tailor their program based on career goals.

Students intending to transfer need to choose courses based on the college transfer agreement.

Recommended Electives:

Science Electives: BIO 101, 105, CHE 105, PHY 101.

*Early Childhood Lab (two hours per week per designated course) – field experiences and observations at a variety of inclusive settings. Physical exam and TB screening required.

Up to 15 ECE credits can be transferred from a regionally accredited college. It is highly preferred that ECE credits transfer from a NAEYC Accredited ECE program of study.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Early Childhood Education Director Specialized Credit Diploma (ECDD)

This program is intended for students who already hold a credential in Teacher Education and are currently employed and/or plan to move into a director or assistant director position. The primary purpose of this program is to enhance knowledge and skills for early childhood directors/administrators. This specialized credit diploma program qualifies as the PA Pathways Director Core Certificate program.

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

- formulate a program management plan.
- demonstrate active participation in professional development and leadership endeavors.
- advocate for best practices through collaborative relationships with families and staff in an early childhood center.

Courses		Credits
ECE 225 or EDU 210	The Early Childhood Professional Behavior Management and Guidance Practices	3
ECE 230	The Director With Vision	3
ECE 235	Program Organization and Management	3
Electives	(Select 6 credits) Accounting (ACC), Business (BUS), Computers/Technology (CIS), Early Childhood Education (ECE), Education (EDU), or Special Education (SED)	6
		15
Credit Total		15

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Early Childhood Education Specialized Credit Diploma (ECED)

Intended to prepare student for employment as an assistant group supervisor with children ages 8 and under in childcare centers and other early care and education classrooms. Credits meet requirements for the Keystone STARS program and for Department of Public Welfare's Professional Development Record. The diploma is designed to articulate into Lehigh Carbon Community College's Early Childhood Education Associate degree program and its Early Childhood Education/Early Intervention Associate degree program.

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

- know patterns of child growth and development and theories of learning.
- use knowledge of family culture and different family structures to work in the collaborative relationships.
- plan, adapt, and implement curriculum experiences based on developmentally appropriate practices.
- plan, adapt, and implement a healthy and safe environment that supports children's growth and development.
- know and use ethical professional behaviors and regulations to advocate for children, families, and colleagues.

Courses		Credits
ECE 110	Fundamentals of Early Childhood Education	3
ECE 120*	Children's Growth and Development	3
ECE 130*	Integrating the Arts and Play in Early Childhood	3
ECE 140*	Observation and Recording Techniques	3
ECE 215*	Language and Literacy	3
		15
Credit Total		15

*Child Care Lab (30 hours per designated course)—field experiences and observations. Physical exam and TB screening test required.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Early Childhood Education/Early Intervention A.A.S. (ECI)

The Early Childhood Education/Early Intervention Associate Degree program is accredited by the National Association for the Education of Young Children (NAEYC).

The Early Learning Center Lab School is accredited by the National Academy of Early Childhood Programs (NAECP), a division of the National Association for the Education of Young Children (NAEYC).

Prepares graduates for careers in early childhood/child care settings with infants, toddlers, and preschoolers. Graduates will be prepared in early intervention to work with children aged birth-five years who are developing typically as well as with young children with developmental delays/disabilities.

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

- know patterns of child growth and development and theories of learning.
- use knowledge of family culture and different family structures to work in the collaborative relationships.
- plan, adapt, and implement curriculum experiences based on developmentally appropriate practices.
- plan, adapt, and implement a healthy and safe environment that supports children's growth and development.
- know and use ethical professional behaviors and regulations to advocate for children, families, and colleagues.

First Semester		Credits
ECE 110	Fundamentals of Early Childhood Education	3
ECE 120*	Children's Growth and Development	
or ECE 125*	Education and Care of Infants and Toddlers	3
EDU 105	Introduction to Special Education	
or ECE 200	Young Children With Special Needs	3
ENG 105	Research and Composition	3
PSY 140	Introduction to Psychology	3
		15

Second Semester		Credits
ECE 130*	Integrating the Arts and Play in Early Childhood	3
ECE 140*	Observation and Recording Techniques	3
ENG 106	Introduction to Literature	3
SED 205	Assistive Technology for Children with Exceptionalities	3
Elective	Mathematics/Science	3-5
		15-17

Third Semester		Credits
ECE 210*	Integrating Curriculum for Early Childhood	3
ECE 215*	Language and Literacy	3
ECI 240	Strategies for Teaching Infants and Toddlers with Special Needs	3
PSY 242	Child Development	3
Elective	Mathematics/Science	3-5
ECI 115	Family-centered Early Intervention	
	Field Experience	1
		16-18

Fourth Semester		Credits
ECE 220+	Internship	6
EDU 210	Behavior Management and Guidance Practices	3
ECI 230	Principles of Family-Centered Early Intervention	3
Elective	General Education	3
		15

Credit Total 61

*Child Care Lab (30 hours per designated course)—Field Experience (40 hours)—field experiences and observations in urban, rural, and high poverty areas at a variety of inclusive child care centers, intermediate units, early intervention agency-based facilities, and other settings serving infants, toddlers, and preschool children with developmental delays/disabilities. PA Child Abuse History Clearance, PA State Police Criminal Record Check, physical exam, and TB screening test required for Child Care Lab courses.

*Student Teaching (280 practicum hours) in a classroom setting with young children.

All students must complete or test out of MAT 090 or MAT 100 since neither fulfills a Mathematics requirement.

Recommendations:

General Education: ASL 101; ENG 111; SPN 101.

Mathematics/Science: BIO 101, 124; PHY 101; MAT 105, 118.

Students interested in Teacher Certification should consult with an advisor and select their electives carefully in accordance with the general education and/or pre-professional requirements at the four-year college or university to which they intend to transfer.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Early Childhood Education/Early Intervention Certificate (ECIC)

Trains personnel for employment as group supervisors serving infants, toddlers, and preschool children ages 5 and under with disabilities or developmental delays, as well as their families. The certificate is designed to articulate into Lehigh Carbon Community College's Early Childhood Education/Early Intervention Associate degree program.

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

- know patterns of child growth and development and theories of learning.
- use knowledge of family culture and different family structures to work in the collaborative relationships.
- plan, adapt, and implement curriculum experiences based on developmentally appropriate practices.
- plan, adapt, and implement a healthy and safe environment that supports children's growth and development.
- know and use ethical professional behaviors and regulations to advocate for children, families, and colleagues.

Courses		Credits
ECE 125*	Education and Care of Infants and Toddlers	
or ECE 120*	Children's Growth and Development	3
ECE 200	Young Children With Special Needs	
or EDU 105	Introduction to Special Education	3
ECE 140*	Observation and Recording Techniques	3
EDU 210	Behavior Management and Guidance Practices	3
ECE 130*	Integrating the Arts and Play in Early Childhood	3
ECI 230	Principles of Family-Centered Early Intervention	3
SED 205	Assistive Technology for Children With Exceptionalities	3
ECI 240	Strategies for Teaching Infants and Toddlers With Special Needs	3
ECE 210*	Integrating Curriculum for Early Childhood	3
ECE 225	The Early Childhood Professional	3
ECI 115*	Family-Centered Early Intervention Field Experience	1
ECE 220+	Internship	4
		35
	Credit Total	35

*Child Care Lab (30 hours per designated course)—field experiences and observations at a variety of inclusive child care centers, agency-based facilities, and other early intervention settings serving infants, toddlers, and preschool children.

Courses may apply to Early Childhood Education/Early Intervention A.A.S. program.

+Physical exam and TB screening test required.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Early Childhood Education/Early Intervention Specialized Credit Diploma (ECID)

Intended to prepare students for employment as assistant group supervisors in child care settings or in classrooms with young children ages 5 and under with disabilities or developmental delays. Credits meet requirements for the Keystone STARS program and for the Department of Public Welfare's Professional Development Record. The diploma is designed to articulate into Lehigh Carbon Community College's Early Childhood Education/Early Intervention Associate degree program.

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

- know patterns of child growth and development and theories of learning.
- use knowledge of family culture and different family structures to work in the collaborative relationships.
- plan, adapt, and implement curriculum experiences based on developmentally appropriate practices.
- plan, adapt, and implement a healthy and safe environment that supports children's growth and development.
- know and use ethical professional behaviors and regulations to advocate for children, families, and colleagues.

Courses		Credits
EDU 210	Behavior Management and Guidance Practices	3
ECE 200	Young Children With Special Needs	3
ECI 230	Principles of Family-Centered Early Intervention	3
ECI 240	Strategies for Teaching Infants and Toddlers With Special Needs	3
ECE 125*	Education and Care of Infants and Toddlers	3
		<hr/>
		15
Credit Total		15

*Child Care Lab (30 hours per designated course) – field experiences and observations at a variety of inclusive child care centers, intermediate units, agency-based facilities, and other early intervention settings serving infants, toddlers, and preschool children with disabilities.

*PA Child Abuse History Clearance, PA State Police Criminal Record Check, physical exam, and TB screening test required for Child Care Lab.

Courses may apply to Early Childhood Education/Early Intervention A.A.S. program.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES
Education A.A. (EDUA)

This program provides a foundation for study towards a four-year degree in education and is intended for preparation to teach grades four and above. The wide range of electives permits students to select courses that will fulfill requirements of four-year colleges. Students who transfer will work towards teacher certification for employment in middle or secondary school settings.

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

- describe the organization and philosophy of middle school and secondary education settings.
- identify the patterns of human typical and atypical adolescent development and biological influences across the life span.
- analyze family culture, communication and different family structures and how to support collaborative relationships.
- describe how to develop teaching and learning environments which integrate technology that are responsive to the needs of middle and secondary level students.
- demonstrate professional dispositions through the construction of their credential portfolio.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

Students seeking to transfer and students seeking teacher certification must consult with an advisor or counselor to select electives very carefully in accordance with the general education and/or pre-professional requirements of the four-year college or university to which students intend to transfer are highly recommended to:

1. Identify transfer institution early and carefully follow advisor college catalog, college web page along with transfer agreement.
2. Maintain a GPA of 3.0 or higher.
3. Successfully take the PAPA exam in order to transfer.
4. Maintain a credential portfolio which includes clearances such as child abuse, state police, FBI and health clearances.
5. Document all observations and experiences.
6. Take Field Experience I early or lab classes that will allow for authentic observation experience.
7. Engage in Professional Community Engagement and Advocacy—TESA—Teacher Education Student Association (Kappa Delta Pi—Teacher Education Honor Society).
8. Successfully complete six credits in math and immediately take the PAPA exam.
9. Two Special Education courses are recommended (SED).
10. At least one ESL course is highly recommended. You may take as electives the three other ESL courses to gain ESL certification in the future.

Note: Elective courses numbered 101 or higher—any credit course numbered 101. However, transfer students must refer to advisement #1 to ensure transfer of course and credits.

First Semester		Credits
ENG 105	Research and Composition	3
EDU 101	Foundations of Education	
or Elective*	Education	3
Elective♦	Social Science	3
Elective+	Mathematics	3
EDU 105	Introduction to Special Education	3
		15
Second Semester		
ENG 106	Introduction to Literature	3
Elective*	Education	3
Elective♦	Social Science	3
Elective+	Mathematics	3
EDU 115	Education Field Experience	1
Elective□	Lab Science	4–5
		17–18
Third Semester		
Elective●	Humanities	3
Electives*	Free Electives	12
		15
Fourth Semester		
Electives*	Free Electives	14–15
		14–15
Credit Total		61

Teacher Education Advisement guidelines for students seeking a teaching career and/or program of study for transfer into a four-year college program:

Recommended electives:

*Education Electives and/or Free Electives: EDU 101, 125, 150, 155, 165, 170, 201, 215, 291, SED 115, 200, 205. However, students must take the responsibility to tailor their course selection based on their intended transfer colleges requirements.

+Mathematics Electives: MAT 120, 150 or higher AA program

♦Social Science Electives: PSY 140,145, SOC 150, 251, GEO 110, 115

□Science Electives: BIO 101, 105, 106, 110, 111, 115, 116, 163, 164

●Humanities Electives: ART, MUS, ASL, ENG, any other world language

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Entrepreneurship and Small Business Specialized Credit Diploma (ENBD)

This program allows students to explore the world of free enterprise. Entrepreneurs are risk takers; self motivated individuals who can predict paradigm shifts giving way to new business opportunities.

The student will evaluate the business skills and commitment necessary to successfully operate an entrepreneurial venture and review the challenges and rewards of entrepreneurship. The student will understand the role of entrepreneurial businesses in the United States and the impact on our national and global economy.

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

- describe the business enterprise concept including ethical considerations.
- demonstrate and integrate computer literacy.
- apply accounting principles and procedures for sole proprietorships and partnerships, including the preparation of annual reports and interim financial statements.
- apply legal principles, particularly rules of contracts, to all business activities.
- describe procedures for compliance with various business ownership regulations and the law.
- describe supervisory skills and standards for owning your own business.

Fall Semester		Credits
ACC 160	Principles of Accounting I	3
BUS 248	Essentials of Entrepreneurship and Small Business	3
BUS 252	Human Resources Management	3
CIS 105	Introduction to Computers and Applications	3
		<hr/> 12
Spring Semester		
BUS 209	Business Communications	3
BUS 241	Business Law I	3
BUS 259	Compensation & Benefits Management	3
IDS 105	Thinking, Problem Solving, and Team Building	3
		<hr/> 12
Credit Total		24

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Hotel Resort Management A.A.S. (HRE)

The Hotel Resort Management Associate Degree program is accredited by the Accreditation Council of Business Schools and Programs (ACBSP).

This career program is designed to provide students with the skills demanded by a management position in the hotel, lodging, and resort divisions of the hospitality industry.

Typical jobs for which graduates are expected to be qualified include guest services, assistant manager, reservations, housekeeping supervisor, sales assistant, server, facilities supervisor, event planner, bar and beverage manager, purchasing manager, and a variety of other positions associated with front- and back-of-the-house operations. Qualified graduates are hired by hotels, resorts, gaming facilities, event planning operations, clubs, contract services organizations, assisted living facilities, and other institutional service organizations.

This program is accredited by the Accreditation Council of Business Schools and Programs (ACBSP).

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

- demonstrate knowledge of front and back operational procedures in hospitality management.
- recognize the importance of the hospitality industry in the global marketplace, identifying historical developments and future trends.
- identify accounting and financial reporting processes used in hospitality organizations.
- demonstrate creativity and sound thinking in property management, problem solving, marketing, and customer service.
- identify laws and regulations and the function of regulatory agencies that impact hospitality organizations.
- apply hospitality management principles in a practicum setting.
- identify sound planning and execution in special events and catered functions.

First Semester		Credits
CIS 105	Introduction to Computers	3
ENG 105	Research and Composition	3
MAT 118	Business and Financial Mathematics	3
HRM 105	Introduction to Hospitality	3
HRM 131	Applied Foodservice Sanitation	2
		<hr/> 14
Second Semester		
HRM 170	Hospitality Ethics	3
HRM 120	Purchasing-Hospitality Industry	3
ENG 107	Writing in the Workplace	
or ENG106	Introduction to Literature	3
SOC 150	Introduction to Sociology	
or PSY 140	Introduction to Psychology	3
HRM 130	Hospitality Facilities and Equipment	3
		<hr/> 15
Summer Session		
HRM 250	Hospitality Management Internship	3
		<hr/> 3
Third Semester		
HRM 205	Dining Room Operations	3
HRM 211	Rooms Division Management	3
HRM 225	Hotel, Restaurant and Travel Law	3
HRM 160	Hospitality Accounting	3
HRM 208	Security and Risk Management	3
		<hr/> 15
Fourth Semester		
HRM 201	Event Planning and Catering	3
HRM 230	Marketing for Hosp. Industry	3
HRM 235	Hospitality Human Resources Management	3
Elective*	Humanities	3
Elective**	Science	3-5
		<hr/> 15-17
Credit Total		62

* Recommended Humanities elective: SPN 105.

** Students who may transfer should take a laboratory science.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Human Resource Management A.A.S. (HMN)

The Human Resource Management Associate Degree program is accredited by the Accreditation Council of Business Schools and Programs (ACBSP).

This program allows students to specialize in personnel and human resource topics. The skills and knowledge provided enhance the ability to effectively attain and maintain an organization's most valuable resource—people. Graduates will be qualified to obtain entry-level human resource management positions, such as benefits coordinator, personnel records supervisor, training and development coordinator, and recruitment specialist.

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

- describe the business enterprise concept, including ethical considerations.
- demonstrate effective oral communication.
- demonstrate and integrate computer literacy.
- apply fundamental accounting principles and procedures.
- apply critical thinking, team building, and problem solving skills.
- apply legal principles, particularly rules of contracts, to all business activities.
- describe business procedures for compliance with various human resource regulations and the law.
- describe supervisory skills and standards for human resource management procedures.
- analyze issues involved in organizational recruitment, training, and development.

First Semester		Credits
BUS 120	Introduction to Business Organization	3
BUS 211	Principles of Management	3
CIS 105	Introduction to Computers and Applications	3
ENG 105	Research and Composition	3
Elective	Humanities	3
		15
Second Semester		
BUS 241	Business Law I	3
BUS 252	Human Resources Management	3
ACC 160	Principles of Accounting I	3
ENG 107*	Writing in the Workplace	3
IDS 105	Thinking, Problem Solving, and Team Building	3
		15
Third Semester		
BUS 257	HRIS/Payroll Administration	3
BUS 258	Labor Relations	3
ECO 201	Principles of Macroeconomics	3
ENG 111	Speech	3
Elective	Mathematics	3
		15
Fourth Semester		
BUS 254	Human Resources Law	3
BUS 259	Compensation and Benefits Management	3
BUS 262	Recruiting, Training, and Evaluating Employees	3
PSY 142	Industrial Psychology	3
Elective	Science	3-5
		15-17
Credit Total		60

*Or ENG 106 for those who plan to transfer.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Human Resource Management Certificate (HMNC)

This program allows students to specialize in personnel and human resource topics. The skills and knowledge provided enhance the ability to effectively attain and maintain an organization's most valuable resource—people. Graduates will be qualified to obtain entry-level human resource management positions, such as benefits coordinator, personnel records supervisor, training and development coordinator, and recruitment specialist. Credits may be applied toward the A.A.S. degree in Human Resource Management.

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

- describe the business enterprise concept, including ethical considerations.
- demonstrate and integrate computer literacy.
- apply fundamental accounting principles and procedures.
- apply legal principles, particularly rules of contracts, to all business activities.
- describe procedures for compliance with various human resource regulations and the law.
- describe supervisory skills and standards for human resource management procedures.
- analyze issues involved in organizational recruitment, training, and development.

Summer Semester		Credits
BUS 120	Introduction to Business Organization	3
CIS 105	Introduction to Computers and Applications	3
		<hr/> 6
First Semester		
BUS 211	Principles of Management	3
BUS 241	Business Law I	3
BUS 252	Human Resources Management	3
ACC 160	Principles of Accounting I	3
		<hr/> 12
Second Semester		
BUS 254	Human Resources Law	3
BUS 259	Compensation and Benefits Management	3
BUS 262	Recruiting, Training, and Evaluating Employees	3
IDS 105	Thinking, Problem Solving, and Team Building	3
		<hr/> 12
Credit Total		30

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Human Services A.A.S. (HUS)

The Human Services Associate Degree program is accredited by the Council for Standards in Human Services Education (CSHSE).

The Human Services A.A.S. program is an interdisciplinary program focusing on the diverse nature of the individual human being, the dynamic process of life, and the human ability to interact and adapt to the living environment.

This program is designed to prepare graduates with the values, knowledge, and skills required for entry-level employment as a human services generalist in the human services field. Human services workers assist individuals, families, and groups to improve the overall quality of life in the community. Graduates may be employed as providers of both direct and indirect client services, e.g. therapeutic support services, caregiver, living assistant/coach, crisis intervener, empowerer, administrative worker, community outreach, and advocate. Graduates are employed as human services workers in a variety of settings, including clinics, hospitals, group homes, correctional centers, government agencies, day treatment centers, sheltered workshops, extended care facilities, community-based living homes, and social services agencies throughout the community.

Lehigh Carbon Community College is an institutional member of the Council for Standards in Human Services Education (CSHSE) and the National Organization of Human Services (NOHS). The Human Services A.A.S. degree is nationally accredited by the CSHSE. Graduates are eligible to take the Human Services-Board Certified Practitioner (HS-BCP) professional credential exam.

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

- use critical thinking and problem-solving skills to assess the needs of individuals, families, and groups within the community.
- demonstrate assistance with goal planning using the appropriate strategies, services, or interventions.
- assist in the development and implementation of a treatment plan using appropriate resources, specialized assistance, and community supports to achieve the desired outcome.
- assist in formulating a systematic method to evaluate the outcome of services and make referrals as appropriate.
- discuss the interaction of human systems, including individuals, families, groups, and communities, within the society and environment.
- describe the effects of one's own values and beliefs in the role of the human services worker.
- demonstrate professional and ethical interaction with a variety of human services providers and agencies.

First Semester		Credits
HUS 110	Introduction to Human Services	3
HUS 120	Interviewing and Case Management	3
ENG 105	Research and Composition	3
PSY 140	Introduction to Psychology	3
SOC 150	Introduction to Sociology	3
PSY 106	Writing in APA	1
		16
Second Semester		
HUS 160	Introduction to Counseling Skills and Theories	3
HUS 170	Systems and Processes	3
CIS 105	Introduction to Computers and Applications	3
ENG 107	Writing in the Workplace	3
PSY 145	Human Growth and Development	3
HUS 215	Professional Seminar	1
		16
Third Semester		
HUS 210	Group Processes	3
HUS 220	Internship I	3.5
SOC 151	Modern Social Problems	3
Elective*	Program Elective	3
Elective ⁺	Mathematics	3
		15.5
Fourth Semester		
HUS 230	Internship II	3.5
HUS 240	Management of Human Services Agencies	3
SOC 251	The Family	3
Elective♦	Science	3-5
Elective*	Program Elective	3
		15.5-17.5
Credit Total		63

*Program electives are limited to the following courses. The first program elective must be a HUS course: HUS 115, 125, 150. The second program elective can be chosen from HUS 115, 125, 150; PSY 242, 243.

⁺Mathematics elective recommendations: MAT 105, 118, 120, 150.

♦Science elective recommendations: BIO 101, 116, 124, 125, 135.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Infant-Toddler CDA Prep Specialized Diploma (ECTD)

Intended to prepare students for entry-level positions working with infants and toddlers in child care and in Early Head Start. The program content also fulfills the formal coursework component for the CDA (Child Development Associate) national credential. Upon completion of the diploma and other CDA requirements, students are eligible to apply to the national Council for Professional Recognition for CDA assessment. All courses in the diploma articulate into LCCC's Early Childhood Education/Early Intervention associate degree program.

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

- identify patterns of growth and development for children aged birth to three years old.
- describe cultural influences and family-centered practices in infant-toddler settings.
- plan, adapt, and implement curriculum experiences based on developmentally appropriate practices for infants and toddlers.
- design a healthy and safe environment that supports infant and toddler growth and development.
- summarize and use ethical professional behaviors, regulations, and advocacy related to colleagues and to very young children and their families.

First Semester		Credits
ECE 125*	Education and Care of Infants and Toddlers	3
		3
Second Semester		
ECE 140	Observation and Recording Techniques	3
ECI 240	Strategies for Teaching Infants and Toddlers	3
		6
Credit Total		9

*ECE 125 and ECE 140 require field experience and observation in early care and education centers with infants and toddler classrooms (30 hours per designated course). Physical exam, TB test, and clearances are required.

For more information about requirements for applying for the Infant-Toddler CDA national credential: www.cdacouncil.org.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Law Enforcement Certificate (LAWC)

The primary purpose of this program is to accommodate in-service officers interested in a specialized field. All courses in this program can be applied to an Associate in Applied Science degree in Criminal Justice Administration. Pre-service students are also eligible to enroll. Graduates may expect entry-level employment as law enforcement officers.

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

- demonstrate a thorough understanding of the functions of the criminal justice system.
- demonstrate an understanding of the functions of law enforcement and how law enforcement relates to the entire criminal justice system.
- develop a historical perspective of the principles, theories, and challenges inherent in law enforcement.

Courses		Credits
CJA 101	Introduction to the Criminal Justice System	3
CJA 105	Criminal Investigations	3
CJA 119	Juvenile Justice	3
CJA 201	Criminal Evidence and Court Procedure	3
CJA 215	Law Enforcement and Society	3
CJA 240	Criminal Law	3
SOC 150	Introduction to Sociology	
or SOC 151	Modern Social Problems	
or SOC 250	Criminology	3
Electives*	Free Electives	9
		<hr/>
Credit Total		30

*Recommended electives: ENG 105, 107, and 111.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Medical Billing Specialist Certificate (MBSC)

This career program is designed to provide students with the medical coding and accounting/basic business skills for entry-level positions in the medical business community. Typical jobs for which graduates are expected to be qualified include medical biller, medical records clerk, insurance coder, and medical office assistant in non-hospital settings. Credits may be applied toward the A.A.S. degree in Accounting, Health Information Technology, and/or Medical Assisting.

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

- demonstrate entry-level administrative technology skills, including office computer operations and insurance billing/collection procedures.
- demonstrate entry-level bookkeeping/accounting skills.
- demonstrate knowledge of the various conventions used in the ICD-10-CM and CPT code books.
- explain the purpose of classification systems and code accurately using the ICD-10-CM or CPT coding systems.
- utilize the medical record to code.
- practice within the ethical-legal framework established by state statutes and organizations, such as the American Association of Medical Assistants (AAMA), American Health Information Management Association (AHIMA), American Institute of Certified Public Accountants (AICPA), American Medical Billing Association (AMBA), and American Academy of Professional Coders (AAPC).

First Semester		Credits
ACC 110	College Accounting	
or ACC 160	Principles of Accounting I	3
BIO 163	Anatomy and Physiology I	4
HIT 110	Introduction to Health Information Science	3
HIT 120	Medical Terminology	3
HIT 255 ⁺	CPT and Other Classification Systems	3
		<hr/> 16
Second Semester		
AOT 112*, 113*, and 114* or		
AOT 115*	Keyboarding I, II, III or Typing I	3
AOT 215 [□]	Medical Office Procedures	3
CIS 105	Introduction to Computer Science and Applications	3
HIT 250	ICD-10 CM Coding and Classification System	3
Elective [◆]	Free Elective	3
		<hr/> 15
Credit Total		31

* Placement testing is available for AOT 112, 113, 114 and 115 (Keyboarding/Typing sequence).

⁺ Prerequisites for HIT 255 will be waived for MBSC majors who are concurrently enrolled in BIO 163 and HIT 110.

[◆] Recommended Free Elective: HIT 150

[□] Prerequisites for AOT 215 will be waived for MBSC majors who are concurrently enrolled in AOT 112, 113, or 114.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Paralegal Studies A.A.S. (PLG)

The Paralegal Studies Associate Degree program is approved by the American Bar Association (ABA).

LCCC's Paralegal Studies is approved by the American Bar Association (ABA) and, because of growth in the paralegal field, provides excellent opportunities for employment and advancement. Qualified graduates of the Paralegal Studies program can be hired by law firms, banks, title companies, real estate firms, and corporations. Career possibilities include paralegal supervisor, trust coordinator, title searcher, settlement clerk, litigation specialist, contract coordinator, and a variety of other positions. Individuals with legal skills take these skills into a multitude of positions in the business environment, including human resources, records management, legal support, and government.

Students will gain an understanding of what paralegals can accomplish, as well as the limitations imposed by the unauthorized practice of law statute. Internships provide students with practical experience in the paralegal field. Students may also transfer credits to various four-year colleges or universities toward a bachelor's degree.

The primary goal of the program is to educate students to become paralegals who perform effectively in a variety of legal settings and adapt to changes in the legal environment and law practice. The program prepares students for careers as paralegals working under the supervision of lawyers in either the public or private sectors, as well as striving to encourage and facilitate graduates to pursue advanced degrees. Paralegals may not provide legal services directly to public except as permitted by law.

Through a collaborative program of study between LCCC and Kutztown University, LCCC's Paralegal Studies graduates may transfer to Kutztown University to major in English, Political Science, Public Administration, Criminal Justice, History, and Psychology.

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

- apply legal and business skills necessary for a position in a law office, bank, real estate office, government authority, or any position that uses the knowledge of law.
- demonstrate substantive knowledge and procedural knowledge of law.
- apply the rules of professional conduct governing lawyers and the application to paralegals.

First Semester

		Credits
PLG 120	Introduction to Paralegal Studies	3
PLG 150	Torts and Personal Injury Law	3
PLG 115*	Law Firm Experience	3
AOT 112*	Keyboarding I	1
AOT 113*	Keyboarding II	1
AOT 114*	Keyboarding III	1
or AOT 115	Typing I	3
ENG 105	Research and Composition	3
		15

Second Semester

PLG 200	Civil Litigation and Procedures	3
ENG 106	Introduction to Literature	3
PLG 105	Law Office Technology	3
Elective	General Education	3
Elective ⁺	PLG Elective	3
		15

Third Semester

PLG 245	Legal Research and Writing	3
RES 110	Real Estate Law	3
PSY 140	Introduction to Psychology	3
Elective ⁺	Program Elective	3
Elective	Social Science/Humanities	3
Elective ^o	Mathematics/Science	3-4
		18-19

Fourth Semester

PLG 250	Internship	3
PLG 220	Contract Law and Business Organizations	3
PLG 255	Legal Writing	3
PLG 215	Law Office Management	3
Elective ^o	Mathematics/Science	3-4
		15-16
Credit Total		63

Up to nine PLG credits will be accepted for transfer into LCCC's PLG program from an ABA-approved program. PLG 200 must be completed at LCCC. PLG credit by assessment is limited to three credits. Total PLG transfer credit and credit by assessment is limited to nine credits.

*Or other appropriate courses as determined by the Paralegal Studies coordinator to meet an individual student's needs.

⁺The student must select three credits with a PLG prefix from the following list: PLG 125, 130, 135, 225, 227, 228, 230, 235, and 240. The other program elective must be selected from the above list or CJA 201, 240; ENG 107; HIT 140, ENG 111; or any other credit course that is approved by the Paralegal Studies coordinator.

ENG 111; or any other credit course that is approved by the Paralegal Studies coordinator.

^oMAT 118 and 125 do not fulfill this requirement.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Paralegal Studies Certificate (PLGC)

The Paralegal Studies Certificate program is approved by the American Bar Association (ABA).

The American Bar Association (ABA) has approved Lehigh Carbon Community College's Paralegal Studies program. This certificate program is designed to meet the needs of the student who presently possesses college credit and is interested in pursuing a career as a paralegal.

Admission to the certificate program is limited to students that currently possess 30 semester hours of college credit, with grades of at least a "C" for each course, of which 18 credits are distributed in at least three of the following acceptable General Education disciplines: English, Math, Science, Humanities, and Social Science. The courses must be liberal arts credits and not technical. Admission is conditional.

The growth of the paralegal field provides excellent opportunities for employment and advancement. Qualified graduates of the Paralegal Studies certificate program can be hired by law firms, banks, title companies, real estate firms, corporations, and government agencies. Career possibilities include paralegal supervisor, trust coordinator, title searcher, settlement clerk, litigation specialist, contract coordinator, and a variety of other positions. An individual with legal skills can take those skills into a multitude of positions in the business environment, including human resources, records management, legal support, and government.

Students will gain an understanding of what paralegals can accomplish, as well as the limitations imposed by the unauthorized practice of law statute. Paralegals may not provide legal services directly to public except as permitted by law. An internship is available to provide students with practical experience in the paralegal field.

The primary goal of the program is to educate students to become paralegals who can perform effectively in a variety of legal settings and adapt to changes in the legal environment and law practice. The program prepares students for careers as paralegals working under the supervision of lawyers in either the public or private sectors.

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

- apply legal and business skills necessary for a position in a law office, bank, real estate office, government authority, or any position that uses the knowledge of law.
- demonstrate substantive knowledge and procedural knowledge of law.
- apply the rules of professional conduct governing lawyers and the application to paralegals.

First Semester		Credits
PLG 120	Introduction to Paralegal Studies	3
PLG 150	Torts and Personal Injury Law	3
AOT 112, 113 & 114*	Keyboarding I, II, & III	3
		9
Second Semester		
PLG 105	Law Office Technology	3
PLG 200	Civil Litigation and Procedures	3
PLG 215	Law Office Management	3
Elective+	PLG Elective	3
		12
Third Semester		
PLG 245	Legal Research and Writing	3
Electives+	PLG Electives	6
		9
Fourth Semester		
PLG 255	Legal Writing	3
PLG 220	Contract Law and Business Organizations	3
Elective+	PLG Elective	3
		9
Credit Total		39

Up to nine PLG credits will be accepted for transfer into LCCC's PLG program from an ABA-approved program. PLG 200 must be completed at LCCC. PLG credit by assessment is limited to three credits. Total PLG transfer credit and credit by assessment is limited to nine credits.

*Or other appropriate courses as determined by the Paralegal Studies coordinator to meet an individual student's needs.

+The student must select the PLG electives from the following list: RES 110, PLG 115, 125, 130, 135, 227, 228, 230, 235, 240, or 250.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Paraprofessional/Special Education A.A.S. (PAR)

To prepare graduates as paraprofessionals or teacher assistants with the skills and knowledge required to effectively educate and serve individuals with diverse learning abilities. Graduates may work in public or private schools in general education or in classroom settings with students with exceptionalities.

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

- identify patterns of human development and learning across the life span and understand that each child's learning and development are unique based on knowledge of family, culture, and biological influences, and special education law.
- develop collaborative relationships with colleagues to support and advocate for children's learning.
- modify, and adapt teaching strategies for individual students.

First Semester		Credits
ENG 105	Research and Composition	3
PSY 140	Introduction to Psychology	3
EDU 105*	Introduction to Special Education	3
EDU 101*	Foundations of Education	3
Elective	Free Elective	3
		15
Second Semester		
ENG 106	Introduction to Literature	3
PSY 145	Human Growth and Development—The Life Span	3
Elective♦	Mathematics/Science	3
SED 205*	Assistive Technology for Children with Exceptionalities	3
SED 114*	Special Education Field Experience I	1
EDU 125*	Linking Assessment and Instruction for Diverse Learners	3
		16
Third Semester		
Elective♦	Mathematics/Science	3-4
Elective	General Education	3
EDU 202*	Fundamentals of Reading Instruction I	3
SED 200*	Instructional Strategies for Children with Exceptionalities	3
Elective+	Program Elective	3
		15-16
Fourth Semester		
Electives	Free Electives	5
EDU 210*	Behavior Management and Guidance Practices	3
SED 220*	Practicum	6
		14
Credit Total		60

Teacher Education Advisement guidelines for students seeking a teaching career and/or program of study for transfer into a four-year college program. Students can select and tailor their program based on career goals. Students intending to transfer need to choose courses based on the college transfer agreement.

*Requires field experience and observations.

+Program elective: Required: Any ECE, ECI, ECM, EDU, SED course or SPN 101, 105, 106, ASL 101 or 105.
 Recommended electives: EDU 114, 150, 155, 165, 170, 240; SED 115; SPN 101, 105, 106, 205; ASL 101, 105.

♦Program electives required: A math or science elective must be chosen from the following list: BIO 101, 105, 106, 110, 111, 115, 116, 124, 125, 130, 135, 163, 164; MAT 105, 118, 120, 125, 126, 150, 160; PHY 101, 103, 110; CHE 105, 108, 111.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Social Work A.A. (SOWA)

This program is designed for students preparing to enter a baccalaureate program in social work at four-year colleges or universities. Social workers perform work in three major areas: child, family and schools; medical and public health; and mental health and substance abuse. This program offers coursework that addresses the values, knowledge, and skills to help people obtain services; counsel individuals, families and groups; help communities or groups improve social and health services; and pursue social justice by participating in legislative processes. The program emphasizes the development of communication, problem-solving and critical thinking skills.

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

- demonstrate academic and personal preparation for transfer to a four-year college/university offering the B.S.W. degree.
- demonstrate the ability to use effectively communication, critical thinking, and problem-solving skills in liberal arts disciplines.
- demonstrate the knowledge and value of cultural-competencies which promotes the strengths and well-being of a diverse society.
- demonstrate an understanding of social work as a profession by exploring the historical influences and social values impacting current social issues and social policies.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ENG 105	Research and Composition	3
ENG 111	Speech	3
HUS 110	Introduction to Human Services	3
PSY 140	Introduction to Psychology	3
SOC 150	Introduction to Sociology	3
		15
Second Semester		
ENG 106	Introduction to Literature	3
HIS 124	United States Since Reconstruction	3
HUS 120	Interviewing and Case Management	3
MAT 150	Probability and Statistics	3
PSY 145	Human Growth and Development	3
		15
Third Semester		
PSC 141	American Federal Government	3
SOC 151	Modern Social Problems	3
SOC 251	The Family	3
Elective*	Humanities	3
Elective*	Lab Science	4-5
		16-17
Fourth Semester		
ECO 201	Principles of Macroeconomics	3
PHI 205	Introduction to Ethics	3
Electives*	Social Science	6
Elective*	Humanities	3
		15
Credit Total		61

Recommendations: Students should consult the catalog of the four-year college or university to which he or she plans to transfer and consult with the institution's Social Work department to ensure that electives of the degree requirements are properly met. Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

*Recommended courses:

Humanities Elective - ART 101, MUS 101, PHI 201, SPN 105, SPN 106, SPN 205, SPN 206, ENG 201, ENG 202, ENG 205, ENG 206, ENG 210, ENG 211, ENG 215.

Social Sciences - SOC 253, 258

Science Elective - BIO 101, BIO 105, BIO 110, BIO 111, BIO 163, BIO 164

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Special Education A.A. (EDSA)

Pre-professional program provides a foundation for continued study toward a bachelor's degree in Special Education. Students pursuing a degree in Early Childhood Education, Elementary Education, or Secondary Education are provided with the fundamental knowledge of individuals with special needs. A wide range of electives permits students to select courses that will fulfill requirements of four-year colleges or universities to which they wish to transfer. It is essential that students consult with a counselor or faculty advisor when planning their academic programs. Field experiences and observations are incorporated into the program.

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

- demonstrate knowledge of exceptionalities linked to assessment, planning, and implementation of special educational strategies.
- describe theories and beliefs about teaching and learning of students with exceptionalities.
- identify special education law and its impact on the profession.
- identify complexities of the relationship with families of individuals with disabilities to support and advocate for the child's learning and well-being.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

A student interested in teacher certification should consult with an advisor or counselor and select electives carefully in accordance with the general education and/or pre-professional requirements of the four-year colleges or universities to which he or she intends to transfer.

Recommended electives:

*Mathematics: MAT 120, 125, 150, or higher. MAT 125 is recommended for students interested in Early Childhood, Elementary, or Special Education.

+Humanities: ENG 201, 202, 205, 206, 210, 211, 214, 215, and 232; HIS 123 or 124; PHI 201; and SPN 105, 106, 205, and 206.

+Social Science: PSY 145 or 242.

♦Special Education: EDU 210 and SED 110, 115, 200, and 205. Transfer of Special Education courses varies among four-year colleges or universities. Students should consult an advisor or counselor when selecting Special Education electives. Students transferring to four year schools should show evidence of:

- 3.0 GPA
- Successfully taken PAPA exam
- Maintain credential portfolio with evidence of clearances (FBI, PA State Police, Child Abuse)
- Provide evidence of liability insurance

First Semester		Credits
ENG 105	Research and Composition	3
EDU 101	Foundations of Education	3
PSY 140	Introduction to Psychology	3
EDU 105	Introduction to Special Education	3
Elective*	Mathematics	3
		15
Second Semester		
ENG 106	Introduction to Literature	3
PSY 240	Educational Psychology	3
Elective♦	Special Education	3
Elective+	Social Science/Humanities	3
Elective	Physical Education	1
Elective*	Mathematics	3
		16
Third Semester		
ENG 111	Speech	3
Elective+	Social Science	3
Elective+	Humanities	3
Elective	Laboratory Science	4-5
Elective♦	Special Education	3
		16-17
Fourth Semester		
Electives□	Courses numbered 101 and above	10-12
Elective	General Education	3
		13-15
Credit Total		60

□Recommended courses numbered 101 or higher, such as SED courses listed above, CIS 105, EDU 201, HPE 101, BIO 101, CHE 105, and PHY 101. A student should consult the catalog of the school to which he or she wishes to transfer to determine if two laboratory science courses are required.

An exemption to the physical education requirement is available to students having a physician complete an official LCCC medical waiver form. Waivers are granted solely on the basis that a physical limitation exists that makes even "very moderate" activity non-beneficial to the participant. Waiver forms must be completed at least one full semester prior to the student's graduation. Request for a waiver should be directed to the Associate Dean of Professional Accreditation and Curriculum.

SCHOOL OF BUSINESS, EDUCATION, LEGAL AND SOCIAL SERVICES

Sport Management A.S. (SPMS)

The Sport Management program is designed for the sports enthusiast who desires to coordinate and operate all types of sports programming. This is an interdisciplinary degree that prepares graduates for business and administration with emphasis on the world of sport. Successful completion of this curriculum prepares graduates for transfer into a four-year college and for future employment in exciting positions in the sports industry. Graduates in Sport Management are qualified for positions in professional sports, school and community sports programs, and private health clubs.

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

- plan, organize, and implement sport programs.
- demonstrate management skills to implement a sport program.
- demonstrate collaboration and cooperation with a variety of sport agencies.
- identify competitive sport industries and strategies to develop the sports community.
- describe how sport history has changed marketing and how to market sport products and services.
- apply the tools of sports technology to develop and enhance a sport program.
- evaluate ethics in the sport industry.
- demonstrate the ability to analyze recreational facilities in terms of safety and optional participation.
- use critical-thinking and problem-solving skills to assess the needs of individuals, school, and community programs regarding sport programs.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CIS 105	Introduction to Computers and Applications	3
ENG 111	Speech	3
SPM 101	Introduction to Sport Management	3
ENG 105	Research and Composition	3
HPE 101	Personal and Community Health	2
Elective*	Physical Education	1
		15
Second Semester		
BUS 120	Introduction to Business Organization	3
ENG 106	Introduction to Literature	3
SPM 102	Sport History and Philosophy	3
PSY 140	Introduction to Psychology	3
Elective♦	Humanities	3
Elective*	Physical Education	1
		16
Third Semester		
BUS 211	Principles of Management	3
Elective•	Laboratory Science	4-5
EXS 107	Care and Prevention of Athletic Injuries	3
Elective*	Physical Education	1
Elective+	Mathematics	3
		14-15
Fourth Semester		
BUS 221	Principles of Marketing	3
SPM 103	Science and Wellness in Sport	3
Electives□	Social Science	6
Elective♦	Humanities	3
Elective*	Physical Education	1
		16
Credit Total		61

Students intending to transfer should consult the catalog of the four-year college or university before choosing electives.

Recommended electives:

*Physical Education: All PED offerings are appropriate.

+Mathematics: MAT 118, 120, and 150.

♦Humanities: ENG 154, 201, 205; HIS 126 and 225; PHI 201 and 205; and SPN 105, 106, 205, and 206.

□Social Science: PSY 257.

•Laboratory Science: BIO 101, 105, 106; CHE 105; PHY 101 and 103.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Applied Technical Studies A.A.S. (ATS)

Technical-Related Option

Designed for students who have successfully passed or whose goal is to pass the National Skills Standards or credentialing exam(s) in a designated technical field. This degree is intended for those students whose educational and occupational goals are not met by the college's other occupational and transfer majors. It allows students to build a sequence of courses to satisfy specific skills for employment and upon successful completion, results in the award of the Associate in Applied Science degree.

The major may be of particular interest to potential and current Career and Technical Education (CTE) high school students and graduates. Students are admitted to this major only after indicating occupational objective they expect to achieve through completion of the program. Interested students should contact the Director of High School Connections.

To receive this degree, the student must:

1. Pass the National Skill Standards or credentialing exam(s).
2. Document that appropriate exam(s) have been passed within the last five years.
3. Meet all the degree requirements as described under Degree as stated in this catalog.
4. Complete the general education requirements as listed.

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

- demonstrate mastery of the skills required by their particular field.
- participate cooperatively within a team.
- communicate effectively.
- evaluate ethical aspects of decision making.

First Semester		Credits
ENG 105	Research and Composition	3
CIS 105	Introduction to Computers and Applications	3
Elective	Social Science/Humanities	3
		9
Second Semester		
ENG 107	Writing in the Workplace	3
IDS 105	Thinking, Problem Solving, and Team Building	3
CMN 112	Oral Communication and Presentation	3
		9
Third Semester		
MAT 130	Industrial Mathematics	3
Elective	Social Science/Humanities	3
		6
Fourth Semester		
BUS 120	Introduction to Business Organization	3
PHY 110	Elements of Physics	4
		7
Credit Total		31

30 credits will be provided by technical education partners, which are appropriate accredited, licensed, certified, or otherwise approved technical education organizations.

Student may need to take additional developmental courses based upon assessment scores.

Credits will be awarded upon the successful completion of National Skills Standards and/or credentialing exams(s) and after students have met LCCC residency requirements.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Aviation Science A.A.S. (AVS)

The ground and flight training courses required for the issuance of an airmen certificate within the Aviation Science Associate Degree program are licensed by the Federal Aviation Administration (FAA).

The Aviation Science degree permits the student with an interest in aviation to experience a blend of pilot and management studies. The degree combines the earning of the Federal Aviation Administration (FAA) Private Pilot certificate with the study of more advanced pilot courses, business courses, computers, and liberal arts courses.

Students who decide on a career as a pilot while or after earning this degree are eligible to enter the Professional Pilot program and add to their pilot credentials. Graduates holding this degree may be hired for ground-based employment with fixed-base operators, municipal airport authorities, airlines, flight schools, state aviation agencies, the federal government, corporate flight departments, aviation-related sales, or general business concerns.

An FAA medical certificate is required for enrollment. The granting of this degree is based upon the student's successful completion of the required coursework and the obtaining of the FAA Private Pilot certificate.

Graduates of this program can seek employment as airport managers, fixed-base operator managers, aircraft dispatchers, corporate airline scheduling coordinators, and customer service representatives.

Additional fees will incur for flight training.

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

- earn the Federal Aviation Administration Private Pilot certificate.
- complete a blend of pilot and business courses allowing the student to specialize in either pilot or management during the last two years of a four-year degree.
- be eligible for entry-level aviation ground employment with fixed-base operators, municipal airport authorities, airlines, flight schools, the federal government, corporate flight departments, aviation-related sales, or general business concerns.

First Semester

		Credits
ASA 111	Private Pilot – Flight Theory	3
ASA 112	Private Pilot Practical	2
ASA 117	Aviation Meteorology	3
ENG 105	Research and Composition	3
MAT 130*	Industrial Mathematics	3
		14

Second Semester

ENG 106	Introduction to Literature	
or ENG 107	Writing in the Workplace	
or ENG 108	Creative Nonfiction	3
ASA 126	Crew Resource Management	3
ASA 127	Aircraft Systems	3
CIS 105	Introduction to Computers and Applications	3
PHY 110*	Elements of Physics	4
		16

Third Semester

ASA 215	Aerodynamics	3
ASA 217	Aviation Laws and Regulations	3
ACC 160	Principles of Accounting I	3
BUS 211	Principles of Management	3
ENG 111	Speech	
or CMN 120	Small Group Communication	3
Elective	ACC, AOT, BUS, or CIS	3
		18

Fourth Semester

ACC 161	Principles of Accounting II	3
ASA 226	Aviation Safety	3
Electives	Social Science/Humanities	6
Elective	General Education	3
		15
Credit Total		63

*MAT 130 must be completed before PHY 110.



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Cisco CCNA Diploma (CNAD)

This is a “Fast-Track” CCNA Diploma Program designed for those students interested in pursuing a career as Cisco Systems Networking Specialists. All course work is offered through the internationally recognized Cisco Systems Networking Academy. This program prepares students to take the Cisco CCENT and CCNA certification examinations.

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

- identify and qualify to apply for positions as entry-level network technicians.
- install, configure and maintain network switches, routers.
- install and maintain network infrastructure for LAN and WAN networks.
- take the Cisco CCNA certification test.

This program is for students who want to pursue Cisco certification and are not enrolled in the Computer Specialist - Network Technology degree.

First Semester		Credits
NET 220	CCNA 1 Introduction to Networks (1st 7 weeks)	3.5
NET 225	CCNA 2 Routing & Switching Essentials (2nd 7 weeks)	3.5
NET 109	Orientation to IT Professionals	1
		<hr/> 8
Second Semester		
NET 230	CCNA 3 Scaling Networks (1st 7 weeks)	3.5
NET 235	CCNA 4 Connecting Networks (2nd 7 weeks)	3.5
		<hr/> 7
Credit Total		15

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Communication A.A. (CMMA)

This program is designed to prepare students in various Communication fields for careers in: organizational and public communication, such as advertising, public relations, event planning, public affairs, corporate communication, politics/government, international relations, and pre-law; speech communication and communication studies, such as counseling, communication education, human resources, theatre, on-air broadcaster performance; and in professional writing such as journalism and media writing. While some students may pursue a program of study for personal enrichment rather than transfer, the degree is designed for students preparing to enter a program leading to a baccalaureate degree at a four-year college or university.

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

- communicate effectively in a variety of situations.
- recognize the importance of effective communication in business, industry, and academia.
- explain contemporary communication theories.
- apply listening, verbal, nonverbal, and conflict resolution techniques.
- identify and consider ethical principles in decision making and communication.
- identify and use the various modes of persuasion.
- apply knowledge and skills toward increased intercultural competence.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

Advisement Comments

** Recommended Communication electives:

Preparation for fields in professional writing such as journalism, publishing, media writing, speech writer, critic

CMN 101	Introduction to Media Communications
CMN 108	Introduction to Public Relations
CMN 113	TV Studio Production
CMN 115	Argumentation & Debate
CMN 118	Media Scriptwriting
CMN 204	Video Field Production
CMN 230	Newspaper Production
ENG/CMN 225	Journalism
ENG 235	Creative Writing

Preparation for fields in speech communication and communication studies such as counseling, communication education, human resources, theatre, on-air broadcaster performance, recruiter

CMN 101	Introduction to Media Communications
CMN 113	TV Studio Production
CMN 115	Argumentation & Debate
CMN 118	Media Scriptwriting
CMN 120	Small Group Communication
CMN 125	Introduction to Theatre
ENG 111	Speech
ENG/CMN 225	Journalism

First Semester		Credits
CMN 105	Interpersonal Communication	3
CMN 112	Oral Communication & Presentation	3
ENG 105	Research and Composition	3
Elective*	Social Science	3
Elective□	Mathematics	3-4
		15-16
Second Semester		
CMN 201	Intercultural Communication	3
ENG 106	Introduction to Literature	3
Elective*	Social Science	3
Elective	General Education	3
Elective	Free Elective	3
		15
Third Semester		
Elective**	Communication	3
Elective	Laboratory Science	4-5
Elective♦	Humanities	3
DMP 250 or Elective	Communications Media Practicum or Communication	3
Elective	Free Elective	3
		16-17
Fourth Semester		
CMN 121	Intro to Communication Theory	3
Elective●	Literature (ENG courses numbered 201 and above)	3
Elective**	Communication	3
Elective	General Education	6
		15
Credit Total		61

Preparation for fields in organizational and public communication such as advertising, public relations, event planning, public affairs, corporate communication, politics/government, international relations, pre-law

BUS 209	Business Communications
BUS 141	Principles of Advertising
CMN 101	Introduction to Media Communications
CMN 115	Argumentation & Debate
CMN 118	Media Scriptwriting
CMN 120	Small Group Communication
ENG 111	Speech
ENG/CMN 225	Journalism

*Recommended Social Science electives: PSY 140; SOC 150, 151, 155.

●Recommended Literature elective: ENG 201 or higher. ENG 225, 235 do not satisfy this requirement.

♦Recommended Humanities electives: World Language: ARB, ASL, CHN, FRN, GRM or SPN 105 or higher. GRM, SPN 101 do not satisfy this requirement.

□Recommended Mathematics Elective: MAT 150 Introduction to Probability and Statistics

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Forensics and Digital Security A.S. (CFSS)

The Computer Forensics and Digital Security A.S. program provides a comprehensive foundation in the theory and application of both technical and non-technical security skills. The program covers a range of competencies required by the quickly evolving digital security industry. Some of these skills include applying protection, detection, and response technologies and procedures to identify threats, vulnerabilities, exploits, and controls in various digital environments. Emphasis is placed on identifying, analyzing, mitigating and communicating risks to digital systems using various tools, techniques, and technologies.

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

- describe different types of security breaches.
- construct secure networks and computer programs.
- classify security for different operating systems.
- demonstrate high-level mathematical skills.
- demonstrate effective communication skills.
- explore diversity in the workplace.
- prepare students to transfer to a traditional college or university and concentrate on any of the computer and network security programs offered.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CIS 105	Introduction to Computers	3
CIS 134	Object-Oriented Programming with Python	3.5
NET 113	A+ IT Technical Support	6
ENG 105	Research and Composition	3
		15.5
Second Semester		
NET 110	Network Essentials	3
CFS 115	Introduction to Digital Security	3
ENG 106	Introduction to Literature	3
MAT 150	Probability and Statistics	3
Elective	Lab Science	4-5
		16-17
Third Semester		
CFS 105	Computer Ethics	3
CFS 145	Principles of Information Security	3
CFS 155	Network Security	3.5
Elective	Social Science	3
MAT 191	Calculus & Analytical Geometry I	4
		16.5
Fourth Semester		
CFS 205	Intrusion Detection and Prevention	3
CIS 250	Operating Systems	3
PSY 140	Introduction to Psychology	3
MAT 203	Discrete Mathematics	3
Elective	Humanities	3
		15
Credit Total		63

Designated DHS/NSA Center of Academic Excellence in Cyber Defense



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Game and Simulation Development – Digital Arts Track A.A. (CGSA)

The degree is designed for students interested in the computer video game and simulation industries or related fields. Program work introduces students to core principles of game design, along with a strong foundation in the digital arts concepts and techniques necessary to create artistic assets. This degree can be used for transfer to a four-year institution or to prepare graduates for entry-level work in a variety of positions including, but not limited to, animator, 2D sprite artist, 3D modeler, texture artist, character rigger, game-environment designer, and user experience designer. Students utilize industry-standard software and game engines, produce game assets and animations, and gain practical experiences working with programming students in team environments to produce game and simulation projects. Effective project management techniques are used as games are developed collaboratively. Skills learned in this degree may be leveraged into other artistic careers or fields of study.

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

- transfer to a four-year college or university for further study.
- design engaging mechanics and systems for game projects.
- develop user experiences in a computer video game, from concept to completion, using two- and three-dimensional game engines in a team-based work environment using appropriate project management techniques.
- create visual artistic assets for use in computer game and simulation projects, often developed collaboratively with the programming track students.
- produce effective and efficient 3D models and textures for use in game projects.
- understand and implement the Principles of Animation, in both two- and three-dimensional animation.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ART 107	Digital Design	3
ART 110	Drawing I	3
CIS 105	Introduction to Computers and Applications	3
CIS 112	Computational Thinking and Programming Logic	3
ENG 105	Research and Composition	3
		<hr/> 15
Second Semester		
ART 118	2D Game and Simulation Graphics	3.5
ART 132	Principles of 3D Modeling and Texturing	3
CIS 118	Game and Simulation Programming Fundamentals	3.5
CIS 133	User Experience Design	3
ENG 106	Introduction to Literature	3
		<hr/> 16
Summer Semester		
Elective	Humanities/Social Science	3
		<hr/> 3
Third Semester		
ART 181	Advanced Modeling 3D Modeling and Texturing	3.5
ART 247	Introduction to Animation	3
CIS 114	Introduction to Game Design	3
CIS 180	Introduction to Project Management	3
Elective	Mathematics	3-4
		<hr/> 15.5
Fourth Semester		
ART 251	Character Rigging and Animation	3
DMP 116	Sound Design for Animation	3
Elective	Physics	4-5
Elective	Humanities/Social Science	6
		<hr/> 16-17
Credit Total		62.5

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Game and Simulation Development – Programming Track A.S. (CGPS)

Students in this major utilize industry-standard development environments, two-dimensional graphics software, programming languages as well as two- and three-dimensional game engines to develop games and simulations. Project work is completed in a team environment in multiple courses and project management best practices are used for all projects. Game design and development course work along with programming skills may lead the graduate into programs of study including Game Programming and Simulation Development, Computer Science, Information Systems or other technology degrees at the four-year college level. In addition, students may choose to work for or form game design studios.

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

- design and program engaging user experiences in computer video games and simulations from concept to completion using two- and three-dimensional game engines in a team-based work environment using appropriate project management strategies.
- create visual artistic assets for use in computer game and simulation projects developed collaboratively with Digital Arts Track students.
- design engaging mechanics and systems for game projects.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ART 107	Digital Design	3
CIS 105	Introduction to Computers and Applications	3
CIS 112	Computational Thinking and Programming Logic	3
CIS 180	Introduction to Project Management	3
ENG 105	Research and Composition	3
		15
Second Semester		
ART 118	2D Game and Simulation Graphics	3.5
CIS 118	Game and Simulation Programming Fundamentals	3.5
CIS 133	User Experience Design	3
ENG 106	Introduction to Literature	3
Elective*	Mathematics	3-4
		16
Third Semester		
CIS 114	Introduction to Game Design	3
CIS 155	Introduction to Computer Science – Structured Programming C++	3.5
CIS 181	3D Game and Simulation Programming	3.5
Elective	Humanities/Social Science	3
		13
Fourth Semester		
Elective	Physics	4-5
DMP 116	Sound Design for Animation	3
CIS 165	Data Structures – C++	3.5
Elective	Humanities/Social Science	6
		16.5-17.5
Credit Total		60.5

*Mathematics 121 does not satisfy this requirement. Student must select the Mathematics elective from MAT 105 or higher, except MAT 121.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer-Generated Animation and Digital Arts A.A.S. (CGA)

This program is designed for students interested in the animation and digital arts industries. Potential career paths in this field include, but are not limited to, animator, 3D modeler, visual effects artist, photographic and video compositor, and motion graphics artist. Students are given a foundation in traditional art, as well as focused education in the digital arts, utilizing industry-standard software, hardware and production techniques to gain practical experience producing digital artwork, whether static or in motion.

While some students may pursue the program of study in order to transfer to other institutions, the degree is designed to allow for portfolio development, leading to entry-level employment in the digital arts field. If students do wish to seek transfer to a four-year college or university, they should contact the potential transfer institution and an advisor to determine the best electives to be taken.

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

- demonstrate effective oral, written, and visual communication skills.
- demonstrate computer literacy.
- utilize knowledge in the principles of design and color theory.
- convey ideas and develop concepts through the use of drawing and digital visualization.
- implement the principles of animation in both two dimensional- and three-dimensional animated projects.
- create effective and efficient 3D models, textures, and scenes.
- integrate animated and video footage with graphics, computer-generated visuals, and sound tracks.
- create work to be included in a demo reel or portfolio, in order to seek entry-level employment or continue education.

First Semester		Credits
ART 107	Digital Design	3
CIS 112	Computational Thinking and Programming Logic	2
ART 108	Two-Dimensional Design	3
ART 111	Color Theory	3
ENG 105	Research and Composition	3
		<hr/> 14
Second Semester		
ART 132	Principles of 3D Modeling and Texturing	3
Elective	Physics	4-5
ART 110	Drawing I	3
SOC 155	Mass Culture	3
ENG 107	Writing in the Workplace	3
		<hr/> 16-17
Third Semester		
ART 109	Motion Graphics	3
ART 247	Introduction to Animation	3
ART 181	Advanced 3D Modeling and Texturing	3
Elective	Social Science/Humanities	3
Elective*	Mathematics	3
		<hr/> 15
Fourth Semester		
ART 251	Character Rigging and Animation	3
ART 252	Computer Generated Dynamic Simulations	3
DMP 116	Sound Design for Animation	3
Elective♦	Digital Arts Elective	3
Elective+	General Education	3
		<hr/> 15
Credit Total		60

*Except for MAT 105, no mathematics courses numbered below 150 will fulfill the mathematics requirement. Students need to check mathematics requirements at transfer institutions before enrolling in a mathematics course, in order to ensure that the most appropriate course is taken.

+Recommended General Education electives: ART 101, CMN 105, CMN 112.

♦Digital Arts Elective must be chosen from the following courses: ART 128, ART 135, ART 210, ART 248, ART/CIS 258, CMN 118, CMN 205.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Information Systems A.S. (CSIS)

This program is intended for students who wish to transfer to a four-year college or university for a bachelor's degree in Computer Information Systems, Management Information Systems, or related degree. The CIS courses required in the program provide a solid educational foundation in current Information Technology areas. Students are encouraged to consult with an academic advisor, faculty advisor, or counselor when choosing elective courses.

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

- use technical vocabulary to communicate effectively about currently available hardware and software.
- develop application software and utilize workgroup software to solve business problems.
- analyze and design systems using Computer-Aided Software Engineering (CASE) tools.
- use data modeling techniques to design databases.
- develop database applications.
- demonstrate college-level mathematical competence.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.



First Semester		Credits
CIS 105	Introduction to Computers and Applications	3
CIS 111	Electronic Commerce	3
Elective*	Mathematics	3-4
BUS 120	Introduction to Business Organization	3
ENG 105	Research and Composition	3
		15-16
Second Semester		
CIS 110	Business Information Systems	3.5
CIS 145	Systems Analysis and Design	3
CIS 225	Computer Organization and Architecture	3
ENG 106	Introduction to Literature	3
Elective	Social Science/Humanities	3
		15.5
Third Semester		
CIS 155	Introduction to Computer Science—Structured Programming—C++	3.5
CIS 255	Database Environment	3.5
CIS 280	Object-Oriented Programming with Visual Basic.NET	3
Elective	Laboratory Science	4
		14
Fourth Semester		
CIS 250	Operating Systems	3
NET 110	Network Essentials	3
Elective	Free Elective	3.5
Electives	Social Science/Humanities	6
		15.5
Credit Total		60

*Except for MAT 105, no mathematics courses numbered below 150 will fulfill the mathematics requirement.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Science A.S. (CISS)

This program is intended for students who wish to transfer to a four-year college or university for a bachelor's degree in Computer Science or Computer Information Science. This program is compliant with the Pennsylvania statewide program-to-program articulation agreement which ensures that students who complete the requirements as stated below will have their coursework and credits transfer into a parallel baccalaureate program at participating institutions with full junior standing and without the need for course-by-course equivalency.

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

- transfer to a 4-year college or university for further study.
- apply information literacy skills and use technical vocabulary to communicate effectively.
- demonstrate problem-solving techniques, algorithmic design, and critical thinking.
- use current technologies to program in C++ using structured and object-oriented techniques.
- apply quantitative reasoning to demonstrate college-level mathematical competence.
- participate cooperatively within a team.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CIS 105	Introduction to Computers and Applications	3
CIS 119	College Survival Bootcamp	1
CIS 155	Introduction to Computer Science—Structured Programming—C++	3.5
ENG 105	Research and Composition	3
MAT 191	Calculus and Analytic Geometry I	4
		14.5
Second Semester		
CIS 225	Computer Organization and Architecture	3
CIS 250	Operating Systems	3
ENG 106	Introduction to Literature	3
MAT 196	Calculus and Analytic Geometry II	4
Elective♦	Laboratory Science	4-5
		17-18
Third Semester		
CIS 165	Data Structures—C++	3.5
CIS 255	Database Environment	3.5
Elective ⁺	Social Science	3
Elective♦	Laboratory Science	4-5
		14-15
Fourth Semester		
MAT 150	Introduction to Probability and Statistics	
or BUS 150*	Business Statistics	3-3.5
ENG 111	Speech	3
MAT 203	Discrete Mathematics	3
Elective□	Humanities	3
Elective ⁺	Social Science	3
		15-15.5
Credit Total		60.5

*Credit will not be given toward graduation requirements for both MAT 150 and BUS 150.

⁺Social Science Electives must be chosen from the following list: ECO 201, ECO 202, PSC 141, PSY 140, PSY 145, PSY 240, PSY 242, SOC 150, SOC 151, SOC 258.

♦Laboratory Science Electives must be taken in course sequence (I and II) from the following list: (BIO 110 and BIO 111), or (BIO 163 and BIO 164), or (CHE 111 and CHE 112), or (PHY 201 and PHY 202), or (PHY 210 and PHY 215).

□Humanities Electives must be selected from the following list: ART 101, ENG 154, 201, 202, 205, 206, 210, 211, FRN 105, 106, GRM 105, 106, HIS 123, HIS 124, HIS 130, HIS 131, MUS 101, PHI 201, 205, SPN 105, 106.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Specialist – Network Technology A.A.S. (CST)

Prepares students who are new to the industry or upgrading an existing skill set for jobs in the networking and telecommunications fields. Graduates are eligible to take appropriate certification exams and can expect to work as entry-level engineers, administrators, or help desk technicians. The program has a problem-based learning approach that focuses on the needed skills of design, implementation, and troubleshooting to a variety of implementations and platforms such as Microsoft Windows, Linux, and Cisco. Our hands-on philosophy starts with ensuring basic understanding from the hardware level up. Students have an opportunity to apply their skills in an internship. Students wishing to obtain certifications will gain a solid foundation in the material covered on the following exams:

- Comptia A+, Network+, Linux+ and Security+
- MCSA: Windows Server 2012
- Certified Cisco Administrator (CCNA)

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

- troubleshoot personal computer hardware and software problems.
- install and administer Windows 2012 Servers.
- troubleshoot server issues.
- demonstrate and apply TCP/IP subnet masking.
- configure network connectivity in IPv4 and IPv6.
- program and configure Cisco routers and switches.
- implement WAN technologies such as PPP, ISDN, and Frame Relay.
- analyze security needs and implement solutions.

First Semester		Credits
BUS 120	Introduction to Business Organization	3
ENG 105	Research and Composition	3
NET 113	A+ IT Technical Support	6
Elective*	General Education	3
		15
Second Semester		
ENG 107**	Writing in the Workplace	3
Elective	Social Science or Humanities	3
MAT 118**	Business and Financial Mathematics	3
NET 129	Installing and Configuring Windows Server 2012	3.5
Elective	Free Elective	3
		15.5
Third Semester		
NET 139	Administering Windows Server 2012	3.5
NET 220	CCNA 1–Introduction to Networks (1st 7 weeks)	3.5
NET 225	CCNA 2–Routing & Switching Essentials (2nd 7 weeks)	3.5
Elective	Social Science or Humanities	3
CFS 155	Network Security	3.5
		17
Fourth Semester		
NET 149	Configuring Advanced Windows Server 2012	3.5
NET 230	CCNA 3–Scaling Networks (1st 7 weeks)	3.5
NET 235	CCNA 4–Connecting Networks (2nd 7 weeks)	3.5
Elective	Science	3-5
NET 210	Linux Installation and Configuration	3.5
		17-19
Credit Total		64.5

*General Education Elective - CIS 105 must be taken in the first semester unless student has passed the CIS 105 challenge exam to receive credit.

** Students intending to transfer to a four-year college or university are advised to consult that institution's catalog to determine the appropriate mathematics and English sequence and transferability of courses.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Specialist – Programming Concentration A.A.S. (CSP)

Graduates will be prepared to program applications using a variety of computer languages. These applications will be developed for the desktop, the Internet, and mobile devices. In addition, databases will be used to implement applications requiring persistent data. Project management best practices are used for all projects.

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

- apply critical thinking, team building, and problem-solving skills.
- use programming languages to develop computerized solutions for a range of problems.
- develop applications for the desktop, the Internet, and mobile environments.
- plan and execute Information Technology projects using appropriate project development approaches and project management techniques.

First Semester		Credits
CIS 105	Introduction to Computers and Applications	3
CMN 120	Small Group Communication	3
CIS 155	Introduction to Computer Science—Structured Programming—C++	3.5
ENG 105	Research and Composition	3
CIS 112	Computational Thinking and Programming Logic	3
		15.5
Second Semester		
CIS 141	Client-Side Scripting I	3.5
CIS 133	User Experience Design	3
ENG 107	Writing in the Workplace	3
CIS 250	Operating Systems	3
Elective*	Mathematics	3
		15.5
Third Semester		
CIS 172	Java I	3
CIS 255	The Database Environment	3.5
CIS 280	Object-Oriented Programming with Visual Basic.NET	3
CIS 180	Introduction to Project Management	3
Electives	Social Science/Humanities	3
		15.5
Fourth Semester		
CIS 207	Unix Server-Side Scripting	3
CIS 145	Systems Analysis and Design	3
CIS 222	Application Development for Mobile Devices	3
Elective	Social Science/Humanities	3
Elective*	Mathematics	3
		15
Credit Total		61.5

*Mathematics electives may include all courses from MAT 105 or higher with the exception of MAT 121.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Computer Specialist – Web Design and Development A.A.S. (CSW)

Prepares students for occupations such as a Web Designer and Developer in the information technology industry. Graduates will be prepared to participate in the development and support of enterprise-level electronic commerce websites using methodologies focused on the development of those sites without the use of pre-packaged software. Students will apply current versions of HTML, XHTML, CSS, JavaScript, Adobe Flash, and PHP with MySQL in the development of websites. Real-world projects are integrated throughout the program and effective project management techniques are used. Adobe Dreamweaver is presented as a tool to aid in the creation of websites.

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

- apply critical thinking, team building, and problem-solving skills.
- work effectively in teams to create websites using technologies presented in the curriculum.
- develop an electronic commerce business plan.
- apply effective design principles to create attractive, accessible, secure client-side and server-side websites.
- develop dynamic server-side websites that interact with Database Management Systems (DBMS) to process transactions effectively and securely.

First Semester		Credits
ART 107	Digital Design	3
CIS 105	Introduction to Computers and Applications	3
CIS 112	Computational Thinking and Programming Logic	3
CIS 180	Introduction to Project Management	3
ENG 105	Research and Composition	3
		<hr/> 15
Second Semester		
CIS 133	User Experience Design	3
CIS 141	Client-Side Scripting I	3.5
CIS 145	Systems Analysis and Design	3
CMN 120	Small Group Communication	3
Elective*	Mathematics	3-4
		<hr/> 15.5
Third Semester		
CIS 111	Electronic Commerce	3
CIS 116	Dreamweaver	1
CIS 142	Client-Side Scripting II	2
CIS 255	The Database Environment	3.5
ART 248	Web-Based Animation	3
PSY 140	Introduction to Psychology	
or SOC 150	Introduction to Sociology	3
		<hr/> 15.5
Fourth Semester		
ART 128	Computer-Aided Logo and Advertising Design	3
CIS 207	Unix Server-Side Scripting	3
ENG 107	Writing in the Workplace	3
Elective*	Mathematics	3-4
Elective	Social Science/Humanities	3
		<hr/> 15
Credit Total		61

*Mathematics electives may include all courses from MAT 105 or higher with the exception of MAT 121.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Construction Management A.A.S. (COM)

Prepares graduates to be employed in the building construction field. Upon completion of this program, graduates can obtain such positions as contractor, subcontractor, building inspector, project coordinator, construction supervisor, construction manager, and estimator.

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

- locate specific details from a drawing set, including plan, elevation, section, and detail drawings.
- produce architectural drawings that display all necessary views, notes, and material lists.
- explain the difference between various common manufacturing materials and possess knowledge of the processes available to transform these materials into finished products.
- demonstrate the proper use of standard hand and power tools.
- identify the major components required for building construction as they pertain to foundations, framing, and interior/exterior finishing.
- demonstrate the proper setup and usage of typical surveying instruments used to prepare a site for future construction.
- utilize the necessary mathematics to formulate components, such as points, angles, areas, and elevations, to be used for survey drawings.
- demonstrate proper procedures for laying out and installing electrical systems and equipment for national electrical code specifications.
- organize and write technical reports based on data and specifications necessary for typical construction projects.
- demonstrate the procedures necessary for preparation and installation of concrete and masonry products used on construction projects.
- demonstrate the use of a computer-aided drafting workstation in creating architectural drawings.
- explain the importance of developing an accurate construction estimate before beginning construction projects.
- demonstrate the proper care and technique required for finishing a construction project.
- interpret OSHA regulations and apply them to all construction areas, equipment, and employees.
- demonstrate a background in the liberal arts and social science areas so that their education is not too narrowly technical and lacking in aesthetics and consideration of social issues.
- communicate with others in a professional manner by means of verbal, written, and electronic media.
- develop a style of workmanship and collaboration necessary for a team environment.
- understand local and national building codes and apply that knowledge to all construction projects.
- demonstrate the procedures for a typical construction project, taking it from initial concept to finished project.

First Semester		Credits
HAC 119	Construction Print Reading	3
MET 104	Manufacturing	3
MAT 160	College Algebra	3
ENG 105	Research and Composition	3
Elective	Social Science/Humanities	3
		15

Second Semester		Credits
CON 102	Frame Construction Techniques	4
CON 104	Concrete/Masonry Principles	3
ENG 106 or ENG 107	Introduction to Literature Writing in the Workplace	3
MET 111	Computer-Aided Drafting	4
Elective	Social Science/Humanities	3
		17

Third Semester		Credits
CON 201	Surveying	3
HAC 160	Residential Wiring	3
PHY 201	Introduction to Physics I	4
CON 105	Architectural Computer Applications	2
CON 204	Construction Codes and Specifications	3
		15

Fourth Semester		Credits
CON 103	Interior/Exterior Finishing	4
CON 202	Construction Estimating	3
CON 210	Construction Practicum	4
CON 220	Construction Management	3
ENG 111	Speech	3
		17
Credit Total		64

- demonstrate organizational skills as they relate to people, materials, and equipment necessary for construction projects.
- prepare bid sheets and contract documents for typical construction projects.
- demonstrate professional mannerism and ethics to employees, vendors, and customers.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Construction Technology A.A.S. (COT)

Prepares graduates to be employed in the building construction field. Graduates can obtain such positions as contractor, subcontractor, building inspector, project coordinator, and estimator.

Students are exposed to various aspects of residential and light commercial buildings. Courses within this program are structured so that students receive both the theory and technical aspects as well as a hands-on approach to solving construction projects. Topics included in this program are layout and design, construction techniques, cost estimation, safety, and construction materials.

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

- locate specific details from a drawing set, including plan, elevation, section, site, and detail drawings.
- produce architectural drawings that display all necessary views, notes, material lists, and schedules.
- explain the difference between various common manufacturing materials and demonstrate a knowledge of the process available to transform these materials into finished products.
- demonstrate the proper use of standard hand and power tools.
- identify the major components required for building construction as they pertain to foundations, framing, electrical, and interior/exterior finishing.
- demonstrate the proper setup and usage of typical surveying instruments used to prepare a site for future construction.
- utilize the necessary mathematics to formulate components, such as points, angles, areas, and elevations, to be used for survey drawings.
- demonstrate proper procedures for laying out and
- installing electrical systems and equipment for national electrical code specifications.
- organize and write technical reports based on data and specifications necessary for typical construction projects.
- demonstrate the procedures necessary for preparation and installation of concrete and masonry products used on construction projects.
- demonstrate the use of a computer-aided drafting workstation in creating architectural drawings.
- explain the importance of developing an accurate construction estimate before beginning construction projects.
- demonstrate the proper care and technique required for finishing a construction project.
- interpret Occupational Safety and Health Administration (OSHA) regulations and apply them to all construction areas, equipment, and employees.
- demonstrate a background in the liberal arts and social science areas so that their education is not too narrowly technical and lacking in aesthetics and consideration of social issues.
- communicate with others in a professional manner by means of verbal, written, and electronic media.
- develop a style of workmanship and collaboration that is necessary for a team environment.

First Semester		Credits
HAC 119	Construction Print Reading	3
MET 104	Manufacturing	3
MAT 130	Industrial Mathematics	3
ENG 105	Research and Composition	3
Elective	Social Science/Humanities	3
		15
Second Semester		
CON 104	Concrete/Masonry Principles	3
CON 102	Frame Construction Techniques	4
ENG 107	Writing in the Workplace	3
MET 111	Computer-Aided Drafting	4
Elective	Social Science/Humanities	3
		17
Third Semester		
CON 201	Surveying	3
HAC 160	Residential Wiring	3
PHY 110	Elements of Physics	4
CON 105	Architectural Computer Applications	2
CON 204	Construction Codes and Specifications	3
		15
Fourth Semester		
CON 103	Interior/Exterior Finishing	4
CON 202	Construction Estimating	3
ENG 111	Speech	3
CON 210	Construction Practicum	4
		14
Credit Total		61

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Construction Technology Certificate (CONC)

Prepares graduates to be employed in the building construction field. Graduates can obtain such positions as contractor, subcontractor, building inspector, project coordinator, or estimator. The courses in this program are specialized and may be applied toward the Construction Technology Associate in Applied Science degree.

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

- locate specific details from a drawing set, including plan, elevation, section, site, and detail drawings.
- produce architectural drawings that display all necessary views, notes, material lists, and schedules.
- explain the difference between various common manufacturing materials and possess knowledge of the processes available to transform these materials into finished products.
- demonstrate the proper use of standard hand and power tools.
- identify the major components required for building construction as they pertain to foundations, framing, electrical, and interior/exterior finishing.
- demonstrate proper procedures for laying out and installing electrical systems and equipment for national electrical code specifications.
- organize and write technical reports based on data and specifications necessary for typical construction projects.
- demonstrate the procedures necessary for preparation and installation of concrete and masonry products used on construction projects.
- demonstrate the use of a computer-aided drafting workstation in creating architectural drawings.
- demonstrate the proper care and technique required for finishing a construction project.
- interpret OSHA regulations and apply them to all construction areas, equipment, and employees.
- develop a style of workmanship and collaboration necessary for a team environment.

First Semester		Credits
HAC 119	Construction Blueprint Reading	3
MET 104	Manufacturing	3
MAT 130	Industrial Mathematics	3
CON 102	Frame Construction Techniques	4
Elective*	Program Elective	3-4
		16-17
Second Semester		
MET 111	Computer-Aided Drafting	4
CON 201	Surveying	3
HAC 160	Residential Wiring	3
CON 105	Architectural Computer Applications	2
CON 204	Construction Codes and Specifications	3
		15
Credit Total		31

*Program elective may be any additional CON course not listed above.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Drafting and Design A.A.S. (DRF)

This program is designed to prepare students for employment as an industry technician or draftsman who is able to make detail and design drawings. The program provides students with knowledge and experience in the areas of computer-aided drafting (CAD), robotics, and computer-aided manufacturing (CAM), so that they are prepared for the high-technology methods employed by industry.

Graduates assist engineers and designers in the investigation, experimentation, and development of products, tools, mechanisms, and machines. Graduates also prepare appropriate detail and design drawings for use in production.

Jobs for which graduates are expected to be qualified include detail draftsman, design draftsman, product design, machine design, and tool design.

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

- use common standards and symbols to make detail and assembly drawings according to accepted industrial practice.
- construct drawings using various special areas of drafting, such as electronic schematics, piping, welding, structural, sheet metal layout, and castings.
- explain the differences between various common manufacturing materials and have a knowledge of the processes available to transform these materials into finished products.
- work from handbooks, catalogs, and other informational sources to obtain the data necessary for selecting machine components.
- design basic tools, jigs, fixtures, and punch dies.
- use creative thinking and good judgment when considering all the factors involved in the evolution of a mechanical design.
- demonstrate and apply the basic principles of fluid power.
- operate a typical computer drafting system.
- organize and write a technical report indicating the data that was determined for the selection of a machine component.
- determine by calculation the various operational values related to machine components, such as force, speed, and power.
- determine by the design of a product or machine the effect it will have on the human element.

First Semester		Credits
ENG 105	Research and Composition	3
MET 101	Mechanical Print Reading	3
MET 104	Manufacturing	3
MAT 105	Intermediate Algebra	3
Elective	Social Science/Humanities	3
		15
Second Semester		
BGT 103	Fluid Power	3
ENG 106	Introduction to Literature	
or ENG 107	Writing in the Workplace	3
MET 111	Computer-Aided Drafting	4
MAT 130	Industrial Mathematics	3
Elective	Social Science/Humanities	3
		16
Third Semester		
MET 106	Mechanical Drafting	4
MTD 201	Basic Mechanisms	4
PHY 201	Introduction to Physics I	4
BGT 240	Industrial Automation	3
Elective	Free Elective	3
		18
Fourth Semester		
MET 115	Computer-Aided Manufacturing	3
MTD 206	Machine Design	4
MTD 208	Tool Design	4
Elective	Free Elective	3
		14
Credit Total		63

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Electrical Engineering Technology A.A.S. (EET)

This program prepares students to obtain entry-level employment in the electrical or electronics industries. Graduates are expected to be qualified for such jobs as technical investigator, electronics technician, quality control technician, engineering aide, and customer engineer.

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

- connect components into basic electrical circuits and use multimeters to verify circuit operation.
- show how the different configurations of capacitance, inductance, and resistance affect the instantaneous voltages and resultant instantaneous currents.
- connect digital circuits common to computers, such as logic gates, flip flops, counters, and arithmetic circuits, into functioning circuits.
- use the instruction set to write assembly language programs to control the operation of the microprocessor.
- construct and experimentally verify the operation of standard electronic circuits, such as power supplies, amplifiers, and oscillators.
- use electrophysical sensors to measure such conditions as light, heat, pressure, and motion to control and operate power devices.
- set up a programmable logic controller to control manufacturing operations.
- use operational amplifiers as a component in a variety of circuits, such as amplifiers, regulators, and active filters.
- apply knowledge of sensing systems to obtain data for a robot to perform specific tasks.
- write programs to control robot functions.
- explain the methods used to transmit and receive radio waves containing intelligence pulse, tone, voice, and coded signals.
- demonstrate a working knowledge of engineering mathematics and engineering physics by properly performing physics laboratory projects and by mathematically evaluating the results.
- write technical reports and develop charts, graphs, and schematics that describe and illustrate the operating characteristics of electrical circuits.

First Semester		Credits
ELE 120	DC Circuits	4
ELE 130	Digital Fundamentals	4
ENG 105	Research and Composition	3
MAT 191	Calculus and Analytical Geometry I	4
		15
Second Semester		
ELE 165	AC Circuits	4
ELE 175	Introduction to Microprocessors	4
MAT 196	Calculus and Analytical Geometry II	4
PHY 201*	Introduction to Physics I	4
Elective	Social Science/Humanities	3
		19
Third Semester		
EGR 101	Engineering Graphics	4
EGR 213	Statics	3
ELE 210	Electronic Circuits	4
ELE 215	Industrial Electronics	2
ELE 235	Programmable Controllers	2
PHY 202*	Introduction to Physics II	4
		19
Fourth Semester		
ELE 275	Integrated Circuits	4
ELE 255	Telecommunications	3
BGT 240	Industrial Automation	3
ENG 107*	Writing in the Workplace	3
Elective	Social Science/Humanities	3
		16
Credit Total		69

Students enrolling in this program must have completed high school Algebra III and Trigonometry or its equivalents (e.g., MAT 160 and MAT 165). It is also recommended that students have completed one year of a high school laboratory science (chemistry or physics preferred).

*Students planning to transfer to a four-year college or university should substitute PHY 210/215 for PHY 201/202 and ENG 106 for ENG 107.

Some four-year colleges and universities require that ENG 111 be completed prior to transfer with junior-year standing.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Electrical Technology A.A.S. (ELT)

This program is designed to prepare the student for employment as an electrical/electronics technician. The program provides students with knowledge and experiences in the areas of electrical wiring, blueprint reading, analog and digital electronics, programmable controllers, and industrial control systems.

Jobs for which graduates are expected to be qualified include electrical/electronics technician, field engineer, industrial maintenance technician, industrial equipment installer, and technical sales representative.

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

- connect a variety of electrophysical sensing devices into circuits which can convert physical changes into voltage changes capable of activating prime movers such as motors or relays.
- interpret commercial and industrial electrical blueprints.
- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate critical thinking/problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.

First Semester		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
ELE 130	Digital Fundamentals	4
MAT 130*	Industrial Mathematics	3
HAC 119	Construction Print Reading	3
		<hr/> 17
Second Semester		
ELE 165	AC Circuits	4
ELE 175	Introduction to Microprocessors	4
ENG 105	Research and Composition	3
HAC 140	Electrical Maintenance I	3
Elective	General Education	3
		<hr/> 17
Third Semester		
ELE 210	Electronic Circuits	4
ELE 215	Industrial Electronics	2
ELE 235	Programmable Controllers	2
HAC 160	Residential Wiring	3
PHY 201	Introduction to Physics I	4
		<hr/> 15
Fourth Semester		
ELE 250	Commercial and Industrial Wiring	3
HAC 155	Electrical Maintenance II	3
ENG 107+	Writing in the Workplace	3
Electives	Social Science/Humanities	6
		<hr/> 15
Credit Total		64

*MAT 160 or higher level courses will also satisfy the mathematics requirement.

+ENG 106 may be substituted for ENG 107.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Electrical Technology Certificate (ELTC)

This program is designed to prepare the student for entry-level employment as an electrical/electronic maintenance technician. Students are provided with knowledge and experiences in the areas of electrical wiring, blueprint reading, basic and industrial electronics, programmable controllers, and industrial control systems. The program provides individuals with an opportunity to update their technical knowledge and skills with training and experiences using state-of-the-art high-technology equipment.

All courses in the program may be applied to the Associate in Applied Science degree in Electrical Technology.

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

- operate and program programmable logic controllers.
- hardwire electromechanical circuits from ladder diagrams.
- plan selected electrical installations as required on residential construction.
- design ladder diagrams to provide specific logic functions for a given industrial control problem.
- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate critical thinking/problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.
- demonstrate an ability to use and apply mathematical quantitative reasoning to design basic functional electronic circuits.
- demonstrate an ability to use and work with computers by writing laboratory reports using a word processing package.
- demonstrate use of computer software packages by simulating circuit operations and obtaining valid circuit parameters.

First Semester		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
HAC 140	Electrical Maintenance I	3
		10
Second Semester		
ELE 130	Digital Fundamentals	4
MAT 130*	Industrial Mathematics	3
		7
Third Semester		
ELE 165	AC Circuits	4
ELE 235	Programmable Controllers	2
HAC 119	Blueprint Reading	3
		9
Fourth Semester		
HAC 155	Electrical Maintenance II	3
ELE 210	Electronic Circuits	4
HAC 160	Residential Wiring	3
		10
Credit Total		36

*MAT 160 or higher level course will also satisfy the mathematics requirement.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Electronics Certificate (ELEC)

Graduates may be employed as electronics technicians. The program at right is recommended; however, other courses may be substituted with the approval of the electronics faculty.

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

- connect components into basic electrical circuits and use multimeters to verify circuit operation.
- determine how the different configurations of capacitance, inductance, and resistance affect the instantaneous voltages and resultant instantaneous currents.
- connect digital circuits common to computers, such as logic gates, flip flops, counters, and arithmetic circuits, into functioning circuits.
- use the instruction set to write assembly language programs to control the operation of the microprocessor.
- construct and experimentally verify the operation of standard electronic circuits, such as power supplies, amplifiers, and oscillators.
- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate critical thinking/problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.
- demonstrate an ability to use/apply mathematical quantitative reasoning to design basic functional electronic circuits.
- demonstrate an ability to use and work with computers by writing laboratory reports using a word processing package.
- demonstrate use of computer software packages by simulating circuit operations and obtaining valid circuit parameters.

First Semester		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
		7
Second Semester		
ELE 130	Digital Fundamentals	4
MAT 130*	Industrial Mathematics	3
		7
Third Semester		
ELE 165	AC Circuits	4
ELE 175	Introduction to Microprocessors	4
ELE 235	Programmable Controllers	2
		10
Fourth Semester		
ELE 210	Electronic Circuits	4
ELE 275	Integrated Circuits	4
		8
Credit Total		32

*MAT 160 or higher level course will also satisfy the mathematics requirement.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Electronics Technology A.A.S. (ELE)

This program is designed to prepare the student for employment as an electronics technician. Graduates will assist engineers in the design, construction, testing, and repair of electronic systems.

Jobs for which graduates are expected to be qualified include technical investigator, electronics technician, computer service technician, quality control, electronic equipment installer, technical writer, engineering assistant in products development, navigational equipment technician, and sales representative.

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

- connect components into basic electrical circuits and use multimeters to verify circuit operation.
- connect digital circuits common to computers, such as logic gates, flip flops, counters, and arithmetic circuits, into functioning circuits.
- use the instruction set to write assembly language programs to control the operation of the microprocessor.
- construct and experimentally verify the operation of standard electronic circuits, such as power supplies, amplifiers, and oscillators.
- use a programmable controller to set up a specific process to control operations.
- use electrophysical sensors to measure such conditions as light, heat, pressure, and motion to control and operate power devices.
- use operational amplifiers as a component in a variety of circuits, such as amplifiers, regulators, and active filters.
- analyze and repair defective circuits in test equipment, control devices, and consumer electronic systems.
- explain the methods used to transmit and receive radio waves containing intelligence pulse, tone, voice, and coded signals.
- describe the operation of cellular communications.
- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate critical thinking/problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.
- demonstrate an ability to use and apply mathematical quantitative reasoning to design basic functional electronic circuits.
- demonstrate use of computer electrical/electronic drafting packages by drawing circuit diagrams and laying out a printed circuit board.
- demonstrate use of computer software packages by simulating circuit operations and obtaining valid circuit parameters.

First Semester		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
ELE 130	Digital Fundamentals	4
ENG 105	Research and Composition	3
MAT 130*	Industrial Mathematics	3
		17
Second Semester		
ELE 155	Electronic Drafting and Construction	1
ELE 165	AC Circuits	4
ELE 175	Introduction to Microprocessor	4
ENG 107+	Writing in the Workplace	3
Elective	Social Science/Humanities	3
		15
Third Semester		
ELE 210	Electronic Circuits	4
ELE 215	Industrial Electronics	2
ELE 235	Programmable Controllers	2
PHY 201	Introduction to Physics I	4
Elective	Social Science/Humanities	3
		15
Fourth Semester		
ELE 255	Telecommunications	3
BGT 240	Industrial Automation	3
ELE 275	Integrated Circuits	4
PHY 202	Introduction to Physics II	4
Elective♦	Program Elective	3
		17
Credit Total		64

*MAT 165 or higher level courses will also satisfy the mathematics requirement.

+ENG 106 may be substituted.

♦Program Electives may be selected from any ASA, CIS, CON, ELE, HAC, KBD, MET or NET courses.



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Fashion Design A.A. (FSDA)

This program is designed for those students who have a special interest in entering the world of fashion. The program prepares students with a foundation in fine arts and fashion concepts, as well as instruction in the techniques needed to create and manipulate designs using digital tools. As in the Fine Arts program, the Fashion Design curriculum consists of a partnership between LCCC and The Baum School of Art, Allentown. While some students may pursue the program of study for personal enrichment or employment rather than transfer, the degree is designed for students preparing to enter a program leading to a baccalaureate degree at a four-year college or university. Because the requirements of four-year colleges or universities vary greatly, students should choose an intended transfer college as soon as possible and work with their advisor to coordinate course selection with the intended transfer institution's program. All students will be expected to prepare a portfolio for transfer or employment applications.

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

- survey painting, sculpture, architecture and other related art forms with consideration of the aesthetic, historical, and technical significance of major artistic achievements.
- learn Fine Art principles and techniques utilized in all aspects of visual art production.
- utilize computer graphics tools and techniques to create and manipulate visual designs.
- use a variety of media to communicate visual ideas and concepts especially as they relate to the human form.
- implement design and construction of garments with an understanding of materials, details, fit, and ability to be worn.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ART 101	Introduction to Art	3
ART 108	Two Dimensional Design	3
ART 111	Color Theory	3
ART 205	Pattern Making I	3
ENG 105	Research and Composition	3
		15
Second Semester		
ART 110	Drawing I	3
ART 152	Clothing Construction	3
ART 135	Three Dimensional Design	3
ENG 106	Introduction to Literature	3
Elective*	Mathematics	3
		15
Third Semester		
ART 107	Digital Design	3
ART 112	Figure Drawing	3
ART 120	Photography I	3
ART 155	Fashion Draping	3
Elective	Social Science/Humanities	3
		15
Fourth Semester		
ART 128	Computer-Aided Logo Concepts & Illustration	3
ART 150	Fashion Design Concepts and Illustration	3
ART 206	Pattern Making II	3
Elective	Social Science/Humanities	3
Elective	Laboratory Science	4-5
		16-17
Credit Total		61

*Except for MAT 105, no mathematics courses numbered below 150 will fulfill the mathematics requirement. Students need to check mathematics requirements at transfer institutions before enrolling in a mathematics course, in order to ensure that the most appropriate course is taken.



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Fine Arts/Studio Arts A.A. (ARTA)

Students in this program will combine classroom study at Lehigh Carbon Community College with studio experiences at the LCCC Schnecksville campus and the Baum School of Art, Allentown. While some students may pursue the program of study for personal enrichment rather than transfer, the degree is designed for students preparing to enter a program leading to a baccalaureate degree at a four-year college or university.

Because the requirements of four-year colleges or universities vary widely, students should choose an intended transfer college as soon as possible and work with their advisor to follow the program described in that college's catalog. All students will be expected to prepare a portfolio for transfer or employment applications.

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

- demonstrate visual communication skills using the basic elements of line, shape, value, texture, color and space.
- use the principles of design and color theory.
- utilize technology as it applies to the arts.
- analyze and render two-dimensional forms via line, value and perspective.
- analyze and construct forms in three dimensions.
- recognize painting, sculpture, and architecture with consideration of the aesthetic, historical, and technical significance of artistic achievements.
- apply critical analysis to visual images and objects.

For transfer information regarding this major, contact an academic advisor or counselor.

First Semester		Credits
ART 101	Introduction to Art	3
ART 108	Two Dimensional Design	3
ART 110	Drawing I	3
ENG 105	Research and Composition	3
Elective	Mathematics	3-4
		15-16
Second Semester		
ART 111	Color Theory	3
ART 115	Painting I	3
ART 135	Three Dimensional Design	3
ENG 106	Introduction to Literature	3
Elective	Social Science/Humanities	3
		15
Third Semester		
Electives	Studio Art	6
Elective	Laboratory Science	4-5
Elective	Social Science/Humanities	3
Elective	Free Elective	3
		16-17
Fourth Semester		
Electives	Studio Art	9
Elective	Social Science/Humanities	3
Elective	Free Elective	3
		15
Credit Total		61

Studio Art Electives may be chosen from any ART courses except ART 212 and the ART courses which are part of the Fine Arts/Studio Arts major listed above.



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Geographic Information Systems Certificate (GISC)

The Geospatial Technology A.A.S. degree and GIS certificate are strong and cutting-edge technical degrees in geospatial technology and provide a foundation for students planning a career in geospatial technology or supplemental preparation for other fields. These degrees address the Department of Labor's Geospatial Technology Competency Model (GTCM) with an emphasis in geographic information systems (GIS), spatial analysis, remote sensing, and global positioning systems (GPS). The programs not only provide students with core competencies in GIS, but reaches farther into the geospatial spectrum by providing a strong emphasis in aerial and satellite-based remote sensing, spatial data acquisition, and publication to the Internet. The degrees provide students with the opportunity to develop skill sets used in many professions.

The curriculum is designed to prepare students to:

- use the Geographic Information System software packages and the geospatial data processing tools.
- understand GIS and remote sensing theory, data acquisition, data processing, and applications.
- understand how GIS is applied to various professions, including but not limited to: agriculture, forestry, environmental, health, transportation, economic development, homeland security, law enforcement, and urban planning.

Career Opportunities:

Students completing the Geospatial Technology A.A.S. degree or GIS certificate will be highly qualified for most entry-level and even intermediate geospatial technology positions, specifically in Geographic Information Systems. The programs give students a competitive edge because students have the opportunity to focus on advanced GIS technological skill sets. Positions could include: local, state, and federal governmental agencies, nonprofit organizations, transportation, public utilities, private sector positions, and military.

The geospatial technology industry is extremely diverse and interdisciplinary, applicable and highly needed in the following industries: business and marketing, geography, urban planning and transportation, architecture, public safety, homeland security, criminal justice and law enforcement, public health, forestry and agriculture, environmental science and wildlife conservation, energy management, natural resource management, history and archeology, sociology, the military, disaster response and mitigation, surveying, computer science, and more.

All GIS courses will be offered online. Depending upon selection, most General Education courses are offered online.

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

- obtain an industry standard Geospatial Certification from ESRI.
- work with ESRI software.
- be knowledgeable about spatial technology and remote sensing.

First Semester		Credits
BUS 120	Introduction to Business Organization	
or BUS 248	Essentials of Entrepreneurship and Small Business	3
CIS 180	Introduction to Project Management	3
ENG 105	Research and Composition	3
GIS 110	Introduction to Smart Mapping (GIS) (1st 8 weeks)	3
GIS 115	Intermediate GIS (2nd 8 weeks)	3
		15
Second Semester		
IDS 105	Thinking, Problem Solving, and Team Building	3
GIS 210	Intermediate Geographic Information Systems 2 (1st 8 weeks)	3
GIS 215	Remote Sensing & Advanced Applications in GIS (2nd 8 weeks)	3
Elective*	GIS	3
		12
Third Semester		
GIS 220	Capstone in Geospatial Technology	3
		3
Credit Total		30

*GIS Elective – Select from one of the following:

- GIS 120 – GIS in Homeland Security
- GIS 125 – GIS in Law Enforcement
- GIS 130 – GIS in Economic Development
- GIS 135 – GIS in STEM

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Geospatial Technology A.A.S. (GIS)

The Geospatial Technology A.A.S. degree and GIS certificate are strong and cutting-edge technical degrees in geospatial technology and provide a foundation for students planning a career in geospatial technology or supplemental preparation for other fields. These degrees address the Department of Labor's Geospatial Technology Competency Model (GTCM) with an emphasis in geographic information systems (GIS), spatial analysis, remote sensing, and global positioning systems (GPS). The programs not only provide students with core competencies in GIS, but reaches farther into the geospatial spectrum by providing a strong emphasis in aerial and satellite-based remote sensing, spatial data acquisition, and publication to the Internet. The degrees provide students with the opportunity to develop skill sets used in many professions.

The curriculum is designed to prepare students to:

- use the Geographic Information System software packages and the geospatial data processing tools.
- understand GIS and remote sensing theory, data acquisition, data processing, and applications.
- understand how GIS is applied to various professions, including but not limited to: agriculture, forestry, environmental, health, transportation, economic development, homeland security, law enforcement, and urban planning.

Career Opportunities:

Students completing the Geospatial Technology A.A.S. degree or GIS certificate will be highly qualified for most entry-level and even intermediate geospatial technology positions, specifically in Geographic Information Systems. The programs give students a competitive edge because students have the opportunity to focus on advanced GIS technological skill sets. Positions could include: local, state, and federal governmental agencies, nonprofit organizations, transportation, public utilities, private sector positions, and military.

The geospatial technology industry is extremely diverse and interdisciplinary, applicable and highly needed in the following industries: business and marketing, geography, urban planning and transportation, architecture, public safety, homeland security, criminal justice and law enforcement, public health, forestry and agriculture, environmental science and wildlife conservation, energy management, natural resource management, history and archeology, sociology, the military, disaster response and mitigation, surveying, computer science, and more.

All GIS courses will be offered online. Depending upon selection, most General Education courses are offered online.

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

- obtain an industry standard Geospatial Certification from ESRI.
- work with ESRI software.
- be knowledgeable about spatial technology and remote sensing.

First Semester		Credits
CIS 105	Introduction to Computers and Applications	3
CIS 180	Introduction to Project Management	3
ENG 105	Research and Composition	3
GIS 110	Introduction to Smart Mapping (Geographic Information Systems) (1st 8 weeks)	3
GIS 115	Intermediate Geographic Information Systems (2nd 8 weeks)	3
		15
Second Semester		
IDS 105	Thinking, Problem Solving, and Team Building	3
ENG 107	Writing in the Workplace	3
GIS 210	Intermediate GIS 2 (1st 8 weeks)	3
GIS 215	Remote Sensing & Advanced Applications in GIS (2nd 8 weeks)	3
Elective*	GIS	3
		15
Third Semester		
Elective ⁺	Mathematics	3-4
BUS 120	Introduction to Business Organization	
or BUS 248	Essentials of Entrepreneurship and Small Business	3
BIO 135	Introduction to Environmental Science	3
Elective*	GIS	3
Elective*	GIS	3
		15-16
Fourth Semester		
Elective	Humanities	3
GIS 220	Capstone in Geospatial Technology	3
Elective	Social Science	3
GEO 110	Cultural Geography or	
or GEO 115	World Regional Geography	3
Elective [♦]	Elective	3
		15
Credit Total		60

*GIS Elective – select from one of the following:

- GIS 120 – GIS in Homeland Security
- GIS 125 – GIS in Law Enforcement
- GIS 130 – GIS in Economic Development
- GIS 135 – GIS in STEM

⁺MAT 118 or higher

[♦]Recommended elective: May choose GIS 280 - GIS Internship.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Graphic Design A.A. (GRDA)

This program is designed for those students who have a special interest in entering the world of graphic design. The program prepares students with a foundation in fine arts, as well as thorough instruction of the tools and techniques needed for digital art and website creation. As in the Fine Arts program, the Graphic Design curriculum consists of a partnership between LCCC and The Baum School of Art, Allentown. While some students may pursue the program of study for personal enrichment or employment rather than transfer, the degree is designed for students preparing to enter a program leading to a baccalaureate degree at a four-year college or university. Because the requirements of four-year colleges or universities vary greatly, students should choose an intended transfer college as soon as possible and work with their advisor to coordinate course selection with the intended transfer institution's program. All students will be expected to prepare a portfolio for transfer or employment applications.

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

- survey painting, sculpture, architecture, and other related art forms with consideration of the aesthetic, historical, and technical significance of major artistic achievements.
- learn fine art principles and techniques utilized in all aspects of visual art production.
- utilize computer graphic tools and techniques to create and manipulate visual designs.
- create visually dynamic projects using current industry development and authoring tools.
- produce web content in accordance to both web design and visual design standards.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ART 101	Introduction to Art	3
ART 108	Two-Dimensional Design	3
ART 111	Color Theory	3
ENG 105	Research and Composition	3
ART 120	Photography I	3
		15
Second Semester		
ART 107	Digital Design	3
ART 110	Drawing I	3
CIS 141	Client-Side Scripting I	3.5
CIS 133	User Experience Design	3
ENG 106	Introduction to Literature	3
		15.5
Third Semester		
ART 128	Computer-Aided Logo and Advertising Design	3
ART 135 or ART 132	Three-Dimensional Design Principles of 3D Modeling and Texturing	3
ART 145	Art of Illustration	3
CIS 116	Adobe Dreamweaver	1
PSY 140	Introduction to Psychology	3
Elective*	Mathematics	3-4
		16-17
Fourth Semester		
ART 242	Desktop Publishing	3
ART 248	Web-Based Interactive Animation	3
BUS 141	Principles of Advertising	3
SOC 155	Mass Culture	3
Elective	Laboratory Science	4-5
		16-17
Credit Total		62.5

*Except for MAT 105, no mathematics courses numbered below 150 will fulfill the mathematics requirement. Students need to check mathematics requirements at transfer institutions before enrolling in a mathematics course, in order to ensure that the most appropriate course is taken.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Heating, Air Conditioning, and Refrigeration (HVACR) Technology A.A.S. (HAC)

The HVACR Technology program offers hands-on experiences to complement the technical training in the areas of heating, air conditioning, and refrigeration, as well as piping skills, residential and commercial wiring, interpreting construction drawings, industrial maintenance, and motor control for residential, commercial, and light industrial settings. Typical operating sequences and troubleshooting are stressed. The program culminates with the entry-level certifications offered by the Air Conditioning and Refrigeration Institute (ARI) and the Environmental Protection Agency (EPA) certification for refrigerant handling.

Employment opportunities include installation and service technician for all facets of HVACR equipment, HVACR counter and outside salespersons, industrial maintenance mechanics, factory service representatives, estimators, and system designers.

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

- identify and list the components and their functions for the basic refrigeration cycle.
- identify refrigerants by measuring temperature and pressure.
- pass EPA certifications for refrigerant recovery and use.
- demonstrate basic shop safety to operate and maintain tools and test equipment.
- use basic laws of physics.
- perform heat loss/heat gain calculations.
- size and lay out air distribution and hydronic piping systems.
- install and service typical residential and light commercial HVACR equipment.
- follow the National Electrical Code (NEC) to install residential and light commercial wiring as it relates to the HVACR industry.
- use basic math functions typical to a business environment.

First Semester		Credits
HAC 104	Basic Electricity	3
ENG 105	Research and Composition	3
HAC 119	Construction Print Reading	3
HAC 131	Air Conditioning and Refrigeration I	3
MAT 118	Business and Financial Mathematics	3
		<hr/> 15
Second Semester		
ENG 107	Writing in the Workplace	3
HAC 132	Air Conditioning and Refrigeration II	3
HAC 140	Electrical Maintenance I	3
HAC 150	Heating Systems	3
ENG 111	Speech	3
		<hr/> 15
Third Semester		
HAC 145	Advanced Air Conditioning and Refrigeration	3
HAC 155	Electrical Maintenance II	3
HAC 160	Residential Wiring	3
HAC 135	Domestic Oil Burners	3
PHY 101	Conceptual Physics	4
Elective	Social Science/Humanities	3
		<hr/> 19
Fourth Semester		
HAC 250	Commercial and Industrial Wiring	3
HAC 125	Piping and Hydronic Heating	3
HAC 200	Applications, Troubleshooting and Certifications in HVACR	3
HAC 210	HVACR Practicum	2
HAC 205	Gas Heat/Heat Pumps	4
Elective	Social Science/Humanities	3
		<hr/> 18
Credit Total		67

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Heating, Air Conditioning, and Refrigeration (HVACR) Technology Certificate (HACC)

Provides students with an in-depth study of heating, air conditioning, and refrigeration servicing, as well as plant maintenance of electrical and mechanical control systems.

All courses in the certificate program can be applied to the HVACR A.A.S. degree program.

Employment opportunities include installation and service technician for all facets of HVACR equipment, HVACR counter and outside salespersons, and factory service representatives.

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

- join copper using soft and hard soldering techniques. read and draw schematic wiring diagrams.
- evaluate blueprints for residential buildings.
- identify and list the components and their function for the basic refrigeration cycle.
- identify refrigerants by measuring temperature and pressures.
- pass EPA certifications for refrigerant recovery and use.
- install and service typical residential and light commercial HVACR equipment.
- follow the NEC to install residential and light commercial wiring as it relates to the HVACR industry.
- install and service natural and LP gas equipment.
- install and service air-to-air heat pumps.
- practice positive customer relations.

First Semester		Credits
HAC 104	Basic Electricity	3
HAC 119	Construction Print Reading	3
HAC 131	Air Conditioning and Refrigeration I	3
HAC 135	Domestic Oil Burners	3
HAC 145	Advanced Air Conditioning and Refrigeration	3
HAC 160	Residential Wiring	3
		18

Second Semester		
HAC 132	Air Conditioning and Refrigeration II	3
HAC 140	Electrical Maintenance 1	3
HAC 150	Heating Systems	3
HAC 125	Piping & Hydronic Heating	3
HAC 200	Applications, Troubleshooting, and Certifications in HVACR	3
HAC 205	Gas Heat / Heat Pumps	4
		19
Credit Total		37

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Industrial Automation A.A.S. (INR)

This program is designed to prepare a student for employment as a technician in an industrial environment that uses automated assembly or processing equipment. The program provides students with knowledge and experiences in the areas of analog and digital electronics, fluid power, robotics, computer-aided drafting (CAD), and computer-aided manufacturing (CAM), so that they are prepared for the “high-technology” methods employed by industry. Graduates will assist engineers in the design, construction, testing, and repair of industrial automation equipment.

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

- connect components into basic electrical circuits and use multimeters to verify circuit operation.
- determine how the different configurations of capacitance, inductance, and resistance affect the instantaneous voltages and resultant instantaneous currents.
- connect digital circuits common to computers, such as logic gates, flip flops, counters, and arithmetic circuits, into functioning circuits.
- write application programs using the BASIC computer language.
- draw the architecture of a typical microprocessor and explain the operation of each section on the microprocessor.
- use the instruction set to write assembly language programs to control the operation of the microprocessor.
- construct and experimentally verify the operation of standard electronic circuits, such as power supplies, amplifiers, and oscillators.
- use electrophysical sensors to measure such conditions as light, heat, pressure, and motion to control and operate power devices.
- use a programmable logic controller to control specific process control operations.
- use operational amplifiers as a component in a variety of circuits, such as amplifiers, regulators, and active filters.
- interpret data sheets of various integrated circuits to select the proper integrated circuit for a given application.
- apply knowledge of sensing devices to measure parameters for a robot to perform specific tasks.
- interpret hydraulic, pneumatic, and electromechanical schematic diagrams as related to robotic systems.
- write programs to control robot functions.
- analyze and repair defective circuits in test equipment and control devices.
- perform operational tests on a variety of hydraulic and pneumatic circuits.
- work from handbooks, catalogs, and other informational sources to obtain the data necessary for selecting a machine component.
- use computer graphics equipment to draw required parts or mechanisms.

First Semester		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
ELE 130	Digital Fundamentals	4
MET 104	Manufacturing	3
		14
Second Semester		
BGT 103	Fluid Power	3
ELE 165	AC Circuits	4
ELE 175	Introduction to Microprocessors	4
ENG 105	Research and Composition	3
MAT 130*	Industrial Mathematics	3
		17
Third Semester		
BGT 240	Industrial Automation	3
ELE 210	Electronic Circuits	4
ELE 215	Industrial Electronics	2
ELE 235	Programmable Controllers	2
MTD 200	Introduction to Mechanisms	3
PHY 201	Introduction to Physics I	4
		18
Fourth Semester		
ENG 107+	Writing in the Workplace	3
MET 111	Computer-Aided Drafting	4
MET 115	Computer-Aided Manufacturing	3
Electives	Social Science/Humanities	6
Elective	General Education	3
		19
Credit Total		68

*MAT 160 or higher level course will also satisfy the mathematics requirement.

+ENG 106 may be substituted for ENG 107.

- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate critical thinking/problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Industrial Automation Certificate (INRC)

The program is designed to prepare the student for employment as a technician in an industrial environment that uses automated assembly or processing equipment. Students are provided with knowledge and experiences in the areas of analog and digital electronics, fluid power, and robotics. The program also provides individuals currently employed as maintenance personnel an opportunity to update their technical knowledge and skills with training and experiences using state-of-the-art high-technology equipment. All courses in the program may be applied to the Associate in Applied Science degree in Industrial Automation.

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

- connect components into basic electrical circuits and use multimeters to verify circuit operation.
- connect digital circuits common to computers, such as logic gates, flip flops, counters, and arithmetic circuits, into functioning circuits.
- use a microcomputer instruction set to write assembly language programs to control the operation of the microprocessor.
- use a programmable logic controller to control specific process control operations.
- interpret hydraulic, pneumatic, and electromechanical schematic diagrams.
- write programs to control robot functions.
- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate an ability to use and apply mathematical quantitative reasoning to design basic functional electronic circuits.
- demonstrate critical thinking and problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.
- demonstrate an ability to use and work with computers by writing laboratory reports using a word processing package.
- demonstrate use of computer software packages to simulate circuit operation and measurements.

First Semester		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
		7
Second Semester		
BGT 103	Fluid Power	3
ELE 130	Digital Fundamentals	4
MAT 130*	Industrial Mathematics	3
		10
Third Semester		
BGT 240	Industrial Automation	3
ELE 235	Programmable Controllers	2
MET 104	Manufacturing	3
		8
Fourth Semester		
ELE 165	AC Circuits	4
ELE 175	Introduction to Microprocessors	4
MET 115	Computer Aided Manufacturing	3
		11
Credit Total		36

*MAT 160 or higher level course will also satisfy the mathematics requirement.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Kitchen and Bath Design A.A.S. (KBD)

The Kitchen and Bath Design Associate Degree program utilizes training materials supplied and supported by the National Kitchen and Bath Association (NKBA) and follows the NKBA guidelines in all design coursework.

This program is designed to prepare students for employment as kitchen and bath designers in the creative world of kitchen and bathroom design. Specialty topics covered will include interior design, architectural drafting, color and lighting, spatial planning, and computer-aided drafting (CAD), which will greatly enhance students' learning experience.

Graduates of this program would work in kitchen and bath design showrooms and would be involved in working with clients, creating room layouts, preparing accurate cost estimates, and overseeing the installation process.

The working graduate would work toward becoming a Certified Kitchen Designer (CKD) or a Certified Bath Designer (CBD).

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

- design kitchens and bathrooms that are both functional and aesthetically attractive.
- explain the processes necessary to take a kitchen or bath design from conception to completion.
- create designs using industry standard CAD software and components.

First Semester		Credits
KBD 101	Introduction to Interior Design	3
KBD 104	Kitchen/Bath Design Principles	3
MET 104	Manufacturing Materials	3
ENG 105	Research and Composition	3
MAT 118*	Business and Financial Mathematics	3
		<hr/> 15
Second Semester		
MET 111	Computer-Aided Drafting	4
KBD 102	Color and Textures	3
BUS 152	Principles of Sales	3
ENG 107	Writing in the Workplace	3
Elective	Social Science/Humanities	3
		<hr/> 16
Third Semester		
KBD 201	Kitchen/Bath Graphic Design	4
KBD 103	Interior Finishing	4
ENG 111	Speech	3
ART 110	Drawing I	
or ART 115	Painting I	3
KBD 105	Kitchen/Bath CAD Design	2
		<hr/> 16
Fourth Semester		
KBD 202	Kitchen/Bath Estimating	2
KBD 203	Kitchen/Bath Studio	4
BUS 120	Introduction to Business Organization	3
PHY 101	Conceptual Physics	
or PHY 103	Fundamentals of Physics	4
Elective	Social Science/Humanities	3
		<hr/> 16
Credit Total		63

*MAT 118 or higher level math course.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Mechanical Engineering Technology A.A.S. (MEC)

This program prepares students to transfer to a four-year college or university offering a bachelor's degree in technology or to obtain entry-level employment in industry. The program provides students with knowledge and experiences in the areas of computer-aided drafting (CAD), robotics, and computer-aided manufacturing (CAM).

A student wishing to transfer should confer with the four-year college or university to ensure that the necessary transfer requirements are being met. Students who wish to obtain employment directly upon graduation are expected to be qualified for jobs as a detail and design draftsman, product designer, machine designer, tool designer, as well as to be involved in industrial planning, manufacturing, and sales.

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

- use common standards and symbols to make detail and assembly drawings according to accepted industrial practice.
- adapt to the various special areas of drafting, such as drafting of electronic schematics, piping, welding, and structural.
- understand the differences between various common manufacturing materials and possess the knowledge of the processes available to transform these materials into finished products.
- understand and apply the basic principles of fluid power.
- operate a typical computer drafting system.
- organize and write a technical report indicating the data that was determined for the selection of a machine component.
- determine by calculation the various operational values related to machine components, such as force, speed, and power.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ENG 105	Research and Composition	3
MET 101	Mechanical Print Reading	3
MET 104	Manufacturing	3
Elective*	Mathematics	3-4
Elective	Social Science/Humanities	3
		15-16
Second Semester		
BGT 103	Fluid Power	3
ENG 106	Introduction to Literature	
or ENG 107	Writing in the Workplace	3
MET 111	Computer-Aided Drafting	4
MET 115	Computer-Aided Manufacturing	3
Elective*	Mathematics	3-4
		16-17
Third Semester		
BGT 101	Basic Statics	3
MET 106	Mechanical Drafting	4
MTD 201	Basic Mechanisms	4
PHY 201	Introduction to Physics I	4
ENG 111	Speech	3
		18
Fourth Semester		
BGT 102	Strength of Materials	3
MTD 206	Machine Design	4
MTD 208	Tool Design	4
PHY 202	Introduction to Physics II	4
Elective	Social Science/Humanities	3
		18
Credit Total		67

Students enrolling in this program must have completed high school Algebra III or its equivalent (MAT 160).

*Mathematics electives are MAT 165, MAT 191 or higher.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Mechanical Technology A.A.S. (MET)

This program is designed to prepare students for employment as industry technicians who can construct detail and design drawings. The program provides students with knowledge and experiences in the areas of computer-aided drafting (CAD), 3D modeling, robotics and computer robotics, and computer-aided manufacturing (CAM), so that they are prepared for the high-technology methods employed by industry.

Graduates assist engineers and designers in the investigation, experimentation, and development of products, tools, mechanisms, and machines. Efforts continue with graduates preparing appropriate detail and design drawings for use in production.

Jobs for which graduates are expected to be qualified are detail draftsman, design draftsman, product design, machine design, and tool design.

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

- use common standards and symbols to make detail and assembly drawings according to accepted industrial practice.
- construct drawings using various special areas of drafting, such as drafting of electronic schematics, piping, welding, structural, sheet metal layout, and castings.
- explain the differences between various common manufacturing materials and possess knowledge of the processes available to transform these materials into finished products.
- work from handbooks, catalogs, and other informational sources to obtain the data necessary for selecting machine components.
- design basic tools, jigs, fixtures, and punch dies.
- use creative thinking and good judgment when considering all the factors involved in the evolution of a mechanical design.
- demonstrate and apply the basic principles of fluid power.
- operate a typical computer drafting system.
- organize and write a technical report indicating the data that was determined for the selection of a machine component.
- determine by calculation the various operational values related to machine components, such as force, speed, and power.
- determine by the design of a product or machine the effect it will have on the human element.
- analyze and determine force systems acting on simple designs.
- calculate simple stress and strain occurring from different loading conditions.

First Semester		Credits
ENG 105	Research and Composition	3
MET 101	Mechanical Print Reading	3
MET 104	Manufacturing	3
MAT 130	Industrial Mathematics	3
Elective	Social Science/Humanities	3
		15
Second Semester		
BGT 103	Fluid Power	3
ENG 106	Introduction to Literature	
or ENG 107	Writing in the Workplace	3
MET 111	Computer-Aided Drafting	4
MET 115	Computer-Aided Manufacturing	3
PHY 201	Introduction to Physics I	4
		17
Third Semester		
BGT 101	Basic Statics	3
MET 106	Mechanical Drafting	4
MTD 201	Basic Mechanisms	4
BGT 240	Industrial Automation	3
		14
Fourth Semester		
BGT 102	Strength of Materials	3
MTD 206	Machine Design	4
MTD 208	Tool Design	4
ENG 111	Speech	3
Elective	Social Science/Humanities	3
		17
Credit Total		63

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Music/Sound Production A.A. (DAPA)

This program is designed for students interested in the music and sound production industries. Program course work explores career opportunities in these industries. Industry positions include, but are not limited to, music producer, sound designer, sound editor, disc jockey, recording and live sound engineers. Students gain practical experience by utilizing industry-standard software, hardware and common production techniques. Students are urged to consult with an academic advisor or counselor to ensure that the courses selected meet LCCC requirements and those of the four-year college or university to which transfer is intended.

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

- demonstrate effective oral, written and visual communication skills.
- demonstrate knowledge in the principles of sound and digital audio.
- apply critical listening and thinking skills.
- record, produce, edit, mix, and master audio using industry-standard equipment and software.
- Record, produce, edit, mix and master audio using industry-standard equipment and software.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CMN 101	Introduction to Media Communications	3
CMN 105	Interpersonal Communication	3
ENG 105	Research and Composition	3
Elective*	Mathematics	3
Elective+	Free Elective	3
		15
Second Semester		
DMP 115	Principles of Sound Production	3
CMN 118	Media Scriptwriting	3
ENG 106	Introduction to Literature	3
Elective	Music	3
Elective	Social Science/Humanities	3
		15
Third Semester		
DMP 216	Digital Audio Production	3
Elective	Music	3
Elective+	Free Elective	3
Elective	Social Science/Humanities	3
Elective•	Laboratory Science	4
		16
Fourth Semester		
Elective	Communications Media Practicum	3
Electives□	Communication, ART elective	6
Elective+	General Education	6
Elective+	Free Elective	3
Elective	Social Science/Humanities	3
		15
Credit Total		61

*Recommended Math elective: MAT 105.

+Recommended Free electives: CMN 113, CMN 204, CMN 205, DMP 225.

•Recommended Lab Science: PHY 101

□Recommended General Education electives: CIS 105, CMN 112, CMN 120, CMN 121



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Nanofabrication Technology A.A.S. (NMT)

This program of study prepares students for technician-level jobs, including those in chemical technology, electronics technology, biotechnology, biopharmaceutical labs, micro-technology labs, and material science industry labs. Students will study electronics at LCCC for three semesters and complete the last semester at the nanofabrication facility at Pennsylvania State University (PSU). Industries involved with nanofabrication include microelectronics, optoelectronics, biopharmaceuticals, and materials. Current spending on nanotech by the U.S. government and industry exceeds \$3 billion a year. Over the next 10 years, nanotechnology will transform every industry sector, from advanced materials, agriculture, and chemicals to electronics, energy, defense, and transportation. Students will have an in-depth knowledge of nanofabrication industry practices and procedures.

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

- use digital circuits common to computers, such as logic gates, flip flops, counters and arithmetic circuits.
- interpret data sheets of various integrated circuits to select the proper integrated circuit for a given application.
- describe the fundamental concepts needed for a thorough understanding of modern biotechnology and its applications.
- list the objectives, techniques, and problems related to the application of biotechnology in many different fields.
- describe the basic material types used in nanofabrication.
- define and explain the interdisciplinary nature of the nanoscience field.
- properly operate equipment used in the basic nanofabrication process.
- explain the safety and health issues involved with the nanofabrication process.
- describe various vacuum pump systems and verify when a system is functioning properly.
- describe thin film deposition and etching practices.
- explain the aspects of photo-lithography from the design to mask fabrication to pattern transfer and inspection.
- demonstrate effective communication skills by writing technical reports based on laboratory experiences.
- demonstrate critical thinking/problem-solving abilities by analyzing a nonfunctioning electrical circuit, determining the problem, and restoring circuit operation.
- demonstrate interpersonal relations, teamwork, and work ethics through group laboratory projects.

First Semester

		Credits
BGT 110	Fundamentals of Technology	3
ELE 120	DC Circuits	4
ELE 130	Digital Fundamentals	4
ENG 105	Research and Composition	3
MAT 130	Industrial Mathematics	3
		17

Second Semester

ELE 165	AC Circuits	4
BIO 112	Introduction to Biotechnology	3
ENG 107	Writing in the Workplace	3
CHE 108*	Essentials of Chemistry	4
Elective	Social Science/Humanities	3
		17

Third Semester

ELE 210	Electronic Circuits	4
PHY 110	Elements of Physics	4
Elective	Social Science/Humanities	3
Elective+	Technical	3
		14

Fourth Semester

◆(Course taken at PSU's Nanofabrication Facility)

SMT 211	Materials, Safety and Equipment, Overview for Nanofabrication	3
SMT 212	Basic Nanofabrication Processes	3
SMT 213	Thin Film in Nanofabrication	3
SMT 214	Lithography for Nanofabrication	3
SMT 215	Materials Modification in Nanofabrication	3
SMT 216	Characterization, Packaging, and Testing of Nanofabricated Structures	3
		18

Credit Total 66

*Students must elect CHE 108 or any chemistry course or sequence of chemistry courses CHE 108 or higher.

+Students may choose from one of the following courses: BGT 240 Industrial Automation, EGR 101 Engineering Graphics, ELE 222 Introduction to Fiber Optics, or MAT 150 Introduction to Probability and Statistics.

◆Fourth semester class work is held at PSU's nanofabrication facility. These courses are designed to be capstone courses for the Nanofabrication Technology program. These courses are lab intensive, leveraging the nanofabrication facility at PSU's University Park campus. All lectures will be given in a technology classroom. This classroom is dedicated to the Center for Nanofabrication Manufacturing Technology and thus has a wide variety of specialized, hands-on materials and facilities continually available to students.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Professional Pilot A.A.S. (AVP)

The ground and flight training courses required for the issuance of an airmen certificate within the Professional Pilot Associate Degree program are licensed by the Federal Aviation Administration (FAA).

This program prepares students to obtain entry-level employment in the aviation industry. It provides both the flight and ground-school training required to successfully earn Federal Aviation Administration (FAA) pilot certification. Students obtain flight training from the FAA approved Part 141 LCCC flight school. Graduates from LCCC flight school may teach at the LCCC flight school and continue their aviation flying careers as pilots in the fields of charter, corporate, and regional airline employment. They are also prepared to transfer to colleges or universities that offer the bachelor's degree in Aviation Science. The granting of this degree is based upon the student's successful completion of required coursework, and successfully passing the flight checks for the FAA Private, Commercial, and Flight Instructor certificates and the Instrument Airplane rating. An FAA medical certificate is required for enrollment as well as U.S. citizenship or approval from the Transportation Security Administration to initiate flight training. Additional fees will incur for flight training.

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

- possess the FAA Commercial Pilot Certificate for single and multiengine airplanes with an instrument airplane rating and the Certified Flight Instructor Certificate for single-engine airplanes.
- perform all phases of visual and instrument flight as pilot in command of a commercial flight to FAA standards, including preflight planning, weather analysis, pertinent flight information procurement, and execution of the flight to federal standards of skill, knowledge, and safety.
- be eligible to continue as a candidate for a bachelor of science degree at a four-year college or university or to enter the aviation industry at an appropriate entry-level pilot position to begin a professional pilot career progression.

First Semester		Credits
ASA 111	Private Pilot–Flight Theory (Airplane)	3
ASA 112	Private Pilot Practical	2
ASA 117	Aviation Meteorology	3
MAT 130*	Industrial Mathematics	3
ENG 105	Research and Composition	3
		14
Second Semester		
ASA 121	Instrument Flight Theory (Airplane)	3
ASA 122	Instrument Airplane Practical	2
ASA 126	Crew Resource Management	3
ASA 127	Aircraft Systems	3
PHY 110*	Elements of Physics	4
		15
Third Semester		
ASA 211	Commercial Flight Theory (Airplane)	3
ASA 212	Commercial Pilot Airplane I	2
ASA 215	Aerodynamics	3
ASA 217	Aviation Laws and Regulations	3
ENG 106	Introduction to Literature	
or ENG 107	Writing in the Workplace	3
or ENG 108	Creative Nonfiction	3
		14
Fourth Semester		
ASA 214	Commercial Pilot Airplane II	2
ASA 221	Multiengine Flight Theory	1
ASA 226	Aviation Safety	3
ASA 230	Flight Instructor Theory (Airplane)	3
Elective	Social Science	3
Elective	General Education	3
		15
Summer Session		
ASA 231	Certified Flight Instructor (ASEL)	2
Elective	Social Science	3
		5
Credit Total		63

*MAT 130 must be completed before PHY 110.



SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

TV/Film A.A. (DVPA)

This program is designed for students interested in the television, film, and a variety of video production industries. Program course work explores career opportunities in these visual communications industries through practical experience in state-of-the-art professional facilities and the teaching of fundamental concepts and theories behind the practice. Industry positions include, but are not limited to, director, producer, camera operator, video editor, script writer, light designer, and production coordinator. Students utilize industry-standard software, hardware and production techniques as they build professional-quality portfolios of their work and engage in projects with their community. While some students may pursue the program of study for immediate entry into the workforce rather than transfer, the degree is designed for students preparing to enter a program leading to a baccalaureate degree at a four-year college or university.

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

- demonstrate effective oral, written, and visual communication skills.
- apply critical thinking skills.
- analyze the evolution of technology in audio and visual communications industries.
- plan, produce, direct, shoot, edit and collaborate with peers and clients on various digital video formats using industry-standard equipment.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CMN 101	Introduction to Media Communications	3
CMN 105	Interpersonal Communication	3
ENG 105	Research and Composition	3
Elective*	Mathematics	3-4
Elective+	Free Elective	3
		15-16
Second Semester		
ART 119	Introduction to Digital Photography	3
CMN 113	TV Studio Production	3
CMN 118	Media Scriptwriting	3
ENG 106	Introduction to Literature	3
Elective	Social Science/Humanities	3
		15
Third Semester		
CMN 204	Video Field Production	3
CMN 205	Introduction to Video Editing	3
Elective♦	General Education	3
Elective	Social Science/Humanities	3
Elective	Laboratory Science	4
		16
Fourth Semester		
Elective	Communications Media Practicum, Communication, ART elective	3
Electives♦	General Education	6
Electives+	Free Electives	6
Elective	Social Science/Humanities	3
		15
Credit Total		61

*Recommended Mathematics elective: MAT 105.

+Recommended Free electives: ART 107, ART 109, ART 111, DMP 115, DMP 250.

♦Recommended General Education electives: CIS 105, CMN 112, CMN 120, CMN 121.

SCHOOL OF COMMUNICATION ARTS, COMPUTERS AND TECHNOLOGY

Tool and Die Machinist Apprenticeship Certificate (TOLC)

The program has been approved by the Bureau of Apprenticeship and Training and must be taken in conjunction with an approved apprenticeship training program. This program is designed to prepare a student for employment as a tool and die maker or machinist. The program provides students with the related technical knowledge necessary to supplement on-the-job training supplied by the sponsoring employer. Experience gained from the program will be in the area of drafting and design, manufacturing processes, and tooling elements. Jobs obtained from this certificate will be as a tool and die machinist or tool designer.

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

- use common standards and symbols to make detail and assembly drawings according to accepted industrial practice.
- adapt to the various special areas of drafting, such as drafting of electronic schematics, piping, welding, and structural.
- understand the differences between various common manufacturing materials and possess knowledge of the processes available to transform these materials into finished products.
- work from handbooks, catalogs, and other informational sources to obtain the data necessary for selecting machine components.
- design basic tools, jigs, fixtures, and punch dies.
- use creative thinking and good judgment when considering all the factors involved in the evolution of a mechanical design.
- understand and apply the basic principles of fluid power.

First Semester		Credits
MAT 130	Industrial Mathematics	3
MET 101	Mechanical Print Reading	3
		6
Second Semester		
MET 104	Manufacturing Processes	3
MET 111	Computer-Aided Drafting	4
		7
Third Semester		
MET 115	Computer-Aided Manufacturing	3
MTD 201	Basic Mechanisms	4
		7
Fourth Semester		
MTD 206	Machine Design	4
MTD 208	Tool Design	4
Apprenticeship Component*		3
		11
Credit Total		31

*Students who have satisfactorily completed at least 600 hours of an approved apprenticeship in a tool and die machinist program will be awarded three credits after completing an application and providing appropriate documentation.

SCHOOL OF HEALTH CARE SCIENCES

Dental Hygiene A.A.S.

In cooperation with Montgomery County Community College

The Dental Hygiene Associate Degree program, through an agreement with Montgomery County Community College, is accredited by the Commission on Dental Accreditation.

In cooperation with Montgomery County Community College, the Dental Hygiene associate degree program prepares you to work as a dental hygienist in a variety of settings and to provide preventative and therapeutic oral care to the public. You'll receive extensive, hands-on training at Central Campus's new, state-of-the-art Health Sciences Center in its dental hygiene clinic. You'll also gain clinical experience at community-based sites.

Upon successful completion of the Dental Hygiene program, you'll receive an Associate of Applied Science degree. If you decide to continue your education, you can transfer your credits to a four-year institution. To make your transfer as smooth as possible, we have established transfer partnerships with several Pennsylvania colleges and universities. We also possess accreditation from The Commission on Dental Accreditation.

The student from Lehigh Carbon Community College who has successfully completed specific general education requirements at LCCC and specific program requirements at MCCC may be granted admission to the Dental Hygiene Program per stated selective admission requirements at Montgomery County Community College. The student must see advisor or transfer counselor.

Montgomery County Community College (MCCC) will accept and grant credit for Lehigh Carbon Community College's courses that are listed as equivalent if the student has completed the course with a grade of "C" or higher.

Program Competencies:

- Demonstrate basic knowledge of legal responsibilities and ethical considerations and apply those to dental hygiene care.
- Demonstrate the knowledge and skills needed to provide dental hygiene care which meet professional standards and licensing examination eligibility.
- Promote optimal oral health and disease prevention as related to general health and wellness for all patients.
- Contribute as an integral member of the healthcare team and assess, plan, implement and evaluate oral health programs for diverse population groups while promoting access to care.
- Value life-long learning and commitment to professional development.

Lehigh Carbon Community College equivalent courses to transfer:

ENG 105	Research and Composition	3
ENG 111	Speech	3
ENG 201		
or higher	World Literature I or other 200-level ENG	3
SOC 150	Introduction to Sociology	3
PSY 140	Introduction to Psychology	3
BIO 163	Anatomy & Physiology I	4
BIO 124	Nutrition	3
BIO 164	Anatomy & Physiology II	4
BIO 220	Introduction to Microbiology	4
Credit Total		30

The following classes are to be taken at Montgomery County Community College upon acceptance into the clinical portion of the Dental Hygiene program:

DHG 100	Theory and Practice of Dental Hygiene I	4
DHG 111	Dental Anatomy	2
DHG 155	Dental Radiology	2
DHG 158	Theory and Practice of Dental Hygiene II	5
DHG 159	Histology and Pathology of Oral Tissues	3
DHG 161	Periodontics I	2
DHG 224	Materials in Dentistry	2
DHG 261	Periodontics II	2
DHG 226	Dental Pain Control	2
DHG 228	Theory and Practice of Dental Hygiene III	8
DHG 253	Community Dentistry	2
DHG 258	Theory and Practice of Dental Hygiene IV	6
Credit Total		40

See page 15 for special program admission requirements pertaining to this program.

SCHOOL OF HEALTH CARE SCIENCES

Health Information Technology A.A.S. (HIT)

The Health Information Technology Associate Degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

This program focuses on automated health information processing, reporting, and retrieval. Upon completion of this program, the student will be able to read objectively, analyze medical records and other related health data, supervise functional areas of the health information department and act effectively and efficiently in any institution that handles healthcare data.

Upon successful completion of this program, graduates:

- demonstrate the ability to meet the entry-level competencies of AHIMA.
- apply to AHIMA for eligibility to sit for the national RHIT exam.
- take an active role in local, state and national health information management associations.
- practice competently as health information technicians in professional entry-level employment in various types of healthcare settings.

First Semester

		Credits
HIT 110	Introduction to Health Information Science	3
HIT 120	Medical Terminology	3
BIO 163	Anatomy and Physiology I	4
ENG 105	Research and Composition	3
CIS 105	Introduction to Computers and Applications	3
		16

Second Semester

HIT 130	Health Information in Alternate Settings	4
HIT 140	Health Law	3
HIT 150	Clinical Documentation Improvement	3
BIO 164	Anatomy and Physiology II	4
Elective	Social Science	3
		17

Third Semester

HIT 210	Health Information Reporting	3
HIT 255	CPT and Other Classification Systems	3
ENG 106 or ENG 107	Introduction to Literature Writing in the Workplace	3
HIT 240	Advanced Medical Terminology and Pathophysiology	3
Elective	Social Science	3
		15

Fourth Semester

HIT 200	Health Information Processing	3
HIT 220	Health Information Management Practicum	3
HIT 230	Professional Practice Experience	4
HIT 250	ICD-10-CM/PCS Coding and Classification System	3
Elective*	Free Elective	3
		16

Credit Total 64

*Recommended Free Elective: HIT 260.

SCHOOL OF HEALTH CARE SCIENCES

Medical Assistant A.A.S. (MED)

The Medical Assistant Associate Degree program is accredited by the Commission on Accreditation of Allied Health Education Programs upon recommendation of the Medical Assisting Education Review Board (MAERB).

Graduates of this program are prepared for entry-level employment as medical assistants in physicians' offices or in those capacities in which medical secretarial and/or basic clinical and laboratory training are required. Jobs for which graduates are expected to be qualified include medical office assistant, medical secretary or medical office manager in single or group medical practices, hospitals, laboratories, public health facilities, armed services, research institutions, and other capacities requiring medical secretarial, medical assisting, and office management skills.

The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon recommendation of the Medical Assisting Education Review Board (MAERB). Commission on Accreditation of Allied Health Education Programs, 20 N. Wacker Drive, Suite 1575, Chicago, IL 60606, 1-800-228-2262, www.caahep.org.

Graduates of the program are prepared to take the American Association of Medical Assistants (AAMA) Certification Examination following graduation.

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

- perform administrative and clinical duties in a variety of ambulatory healthcare settings.
- demonstrate entry-level administrative technology skills, including office computer operations, bookkeeping/accounting functions, and insurance billing/collection procedures.
- integrate concepts of the liberal arts and social sciences to promote effective communication with patients and colleagues.
- demonstrate knowledge and skill applying fundamental principles of ambulatory patient care, including infection control, specimen collection, and diagnostic testing.
- utilize teaching-learning techniques to identify, direct, and evaluate health education needs of patients.
- practice within the ethical-legal framework established by state statutes and the AAMA.

First Semester		Credits
MED 101	Introduction to Medical Assisting	3
AOT 112, 113, 114	Keyboarding I, II, III	3
AOT 206	Office Procedures	3
ENG 105	Research and Composition	3
MAT 118	Business and Financial Mathematics	3
PSY 140	Introduction to Psychology	3
		<hr/> 18
Second Semester		
MED 102	Medical Assisting I	5
MED 104	Clinical Procedures I	3
AOT 117, 118	Keyboarding IV, V	3
AOT 215	Medical Office Procedures	3
MAT 121	Mathematics for Allied Health	3
		<hr/> 17
Third Semester		
MED 201	Medical Assisting II	3
MED 203	Clinical Procedures II	3
MED 205*	Clinical Experience I	2
ACC 110	College Accounting	3
AOT 251	Advanced Medical Office Procedures	3
ENG 106	Introduction to Literature	3
		<hr/> 17
Fourth Semester		
MED 202	Medical Assisting III	3
MED 206*	Clinical Experience II	2
MED 216	Medical Office Management	3
PSY 145	Human Growth and Development	3
Elective	General Education	3
		<hr/> 14
Credit Total		66

Students who have had keyboarding experience will be placed in keyboarding classes at the appropriate level.
 ACC 110 will include a medical office accounting practice set.

*At least a "C" in all Medical Assistant (MED) courses, a cumulative GPA of at least 2.2, completion of first and second semester courses, and approval of the program coordinator are required before enrollment in MED 205 and 206.

Students accepted to the program may only withdraw or receive a grade below "C" in one course within the Medical Assistant curriculum to continue in the program.

See page 16 for special program admission requirements pertaining to this program.

SCHOOL OF HEALTH CARE SCIENCES

Medical Laboratory Technician A.A.S.

In cooperation with Montgomery County Community College

The Medical Laboratory Technician Associate Degree program, through an agreement with Montgomery County Community College, is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS) and abides by the standards and guidelines set forth by the agency.

In cooperation with Montgomery County Community College

This program is intended primarily to educate technicians for work in clinical, diagnostic laboratories. Medical Laboratory Technicians perform tests under the direction of a physician who specializes in diagnosing the causes and nature of disease. Medical Laboratory Technicians also work under the supervision of scientists doing research on new drugs or the improvement of laboratory techniques. Graduates may seek employment with hospitals, independent laboratories, physicians, clinics, public health agencies, pharmaceutical firms, research institutions and industrial laboratories.

The student from Lehigh Carbon Community College who has successfully completed specific general education requirements at LCCC and specific program requirements at MCCC may be granted sophomore-level standing and admission to the Medical Laboratory Technician Program per stated selective admission requirements at Montgomery County Community College. The student must see advisor or transfer counselor.

Montgomery County Community College (MCCC) will accept and grant credit for Lehigh Carbon Community College's courses that are listed as equivalent if the student has completed the course with a grade of "C" or higher.

Program Competencies:

- Follow established procedures for collection and processing biological specimens for analysis and perform assigned analytical tests or procedures.
- Recognize factors that affect measurements and results and take appropriate action according to predetermined protocols; recognize abnormal results, correlate them with disease processes, and refer them to designated supervisory personnel.
- Operate instruments within the scope of training utilizing established protocols and quality control checks, recognizing equipment malfunctions and notifying supervisory personnel when appropriate.
- Report information such as test results, reference range and specimen requirements to authorized sources.
- Perform routine quality control and maintain accurate records. Recognize out-of-control results and notify supervisory personnel.
- Demonstrate a professional attitude in interpersonal communication skills with patients, peers, supervisors, other health care professionals and the public.

Lehigh Carbon Community College equivalent courses to transfer:

ENG 105	Research and Composition	3
ENG 111	Speech	3
CIS 105	Introduction to Computers and Applications	3
SOC 150	Introduction to Sociology	3
BIO 163	Anatomy & Physiology I	4
PHI 201 or PHI 205	Introduction to Philosophy	
	Introduction to Ethics	
BIO 220	Introduction to Microbiology	4
Credit Total		23

The following courses are to be taken at MCCC prior to the selective admission process:

MLT 110	Introduction for the MLT	4
CHE 131	Chemistry for the Technologies I	4
MLT 123	Immunohematology Lecture	2
MLT 124	Immunohematology Lab	1
MLT 125	Hematology Lecture	2
MLT 126	Hematology Lab	1
CHE 132	Chemistry for the Technologies II	4
MLT 233	Clinical Chemistry Lecture	3
MLT 234	Clinical Chemistry Lab	2
MLT 235	Clinical Practicum in MLT I	3
BIO 241	Clinical Microbiology II	4
BIT 124	Molecular Techniques	2
MLT 244	Professional Issues in MLT	2
MLT 245	Clinical Practicum in MLT II	6
MLT 246	MLT Seminar	1
Credit Total		41

SCHOOL OF HEALTH CARE SCIENCES

Medical Laboratory Technician A.A.S.

In cooperation with Reading Area Community College

The Medical Laboratory Technician Associate Degree program, through an agreement with Reading Area Community College, is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS).

In cooperation with Reading Area Community College

This program is intended primarily to educate technicians for work in clinical, diagnostic laboratories. Medical Laboratory Technicians perform tests under the direction of a physician who specializes in diagnosing the causes and nature of disease. Medical Laboratory Technicians also work under the supervision of scientists doing research on new drugs or the improvement of laboratory techniques. Graduates may seek employment with hospitals, independent laboratories, physicians, clinics, public health agencies, pharmaceutical firms, research institutions and industrial laboratories.

The student from Lehigh Carbon Community College who has successfully completed specific general education requirements at LCCC and specific program requirements at RACC may be granted sophomore-level standing and admission to the Medical Laboratory Technician Program per stated selective admission requirements at Reading Area Community College. The student must see advisor or transfer counselor.

Reading Area Community College (RACC) will accept and grant credit for Lehigh Carbon Community College's courses that are listed as equivalent if the student has completed the course with a grade of "C" or higher.

Program Competencies:

- Follow established procedures for collection and processing biological specimens for analysis and perform assigned analytical tests or procedures.
- Recognize factors that affect measurements and results and take appropriate action according to predetermined protocols; recognize abnormal results, correlate them with disease processes, and refer them to designated supervisory personnel.
- Operate instruments within the scope of training utilizing established protocols and quality control checks, recognizing equipment malfunctions and notifying supervisory personnel when appropriate.
- Report information such as test results, reference range and specimen requirements to authorized sources.
- Perform routine quality control and maintain accurate records. Recognize out-of-control results and notify supervisory personnel.
- Demonstrate a professional attitude in interpersonal communication skills with patients, peers, supervisors, other health care professionals and the public.

Lehigh Carbon Community College equivalent courses to transfer:

ENG 105	Research and Composition	3
ENG 111	Speech	
or ENG 107	Writing in the Workplace	3
MAT 150	Introduction to Probability and Statistics	3
SOC 150	Introduction to Sociology	
or PSY 140	Introduction to Psychology	3
PHI 201	Introduction to Philosophy	
or PHI 205	Introduction to Ethics	3
CHE 111	General Chemistry I	3
BIO 163	Anatomy and Physiology I	4
BIO 164	Anatomy and Physiology II	4
BIO 220	Introduction to Microbiology	4
CIS 105	Introduction to Computers and Applications	3
Credit Total		33

The following courses are to be taken at RACC prior to the selective admission process:

Spring Semester

MLT 120	Basic Immunology	2
CHE 250	Organic Chemistry I (may be taken at LCCC if the student has CHE 112)	4
CHE 251	Chemistry of Biomolecules	1
HEA 220	Clinical Implications of Laboratory Tests	1
Credit Total		8

Admission into the clinical portion of the MLT program is on a selective basis. The following classes are to be taken at Reading Area Community College upon acceptance into the clinical portion of the Medical Laboratory Technician Program.

Fall Semester

MLT 110	Introduction to the Clinical Lab (may be waived)	1
CHE 260	Theory of Chemical Instrumentation	2
MLT 211	Clinical Laboratory Techniques	4

Winter Interim

MLT 222	Clinical Urinalysis	1
MLT 233	Clinical Serology	1

Spring Semester

MLT 220	Clinical Hematology/ Coag	5
MLT 221	Clinical Chemistry	4
MLT 230	Clinical Blood Banking and Immunology	4
MLT 231	Clinical Microbiology	4
Credit Total		26

See page 16 for special program admission requirements pertaining to this program.

SCHOOL OF HEALTH CARE SCIENCES

Nursing A.A.S. (ADN)

The Nursing Associate Degree program is fully accredited by the Accreditation Commission for Education in Nursing Inc. (ACEN).

The Nursing Associate Degree program maintains full approval status with the Pennsylvania State Board of Nursing.

The associate degree nursing program prepares graduates to deliver quality care to promote and/or maintain and restore health and well-being. Emphasis of this program will be educating persons to perform holistic nursing care in a variety of healthcare settings.

In addition to classroom instruction, students will receive clinical instruction. Persons who earn an Associate in Applied Science degree in Nursing must successfully complete the Virtual ATI NCLEX-RN review course to be eligible to sit for the National Council Licensing Examination (NCLEX-RN). Success on this examination qualifies a nurse to practice as a registered/licensed nurse.

The program is provisionally approved by the PA State Board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, Ga. 30326; 404-975-5000; www.acenursing.org.

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

- Synthesize information from nursing, biological, social and behavioral sciences into the delivery of nursing care.
- Promote, maintain and restore health integrity of assigned clients by utilizing evidence based practice, technology and resources for the achievement of quality patient/client outcomes.
- Use the nursing process to provide safe, cost effective, quality care to individuals, families and communities across the lifespan.
- Communicate therapeutically to ensure safe, quality care to individuals, families, and communities.
- Provide inter-professional, evidence based care that is socially responsible, environmentally sound, and culturally/spiritually sensitive to diverse populations within select healthcare delivery systems.
- Demonstrate accountability, advocacy and professionalism within the framework of legal and ethical standards of the nursing profession.
- Develop attitudes, values and personal qualities that reflect a commitment to lifelong learning as a professional nurse and member of the healthcare team.

Special program costs include health examinations, supplies, uniforms, standardized examinations, insurance and SNAP membership.

First Semester		Credits
ADN 150	Introduction to Basic Human Needs	9
BIO 163	Anatomy and Physiology I	4
ENG 105	Research and Composition	3
PSY 140	Introduction to Psychology	3
		19*

Second Semester		Credits
ADN 160	Meeting Adult Health Needs	8
BIO 164	Anatomy and Physiology II	4
PSY 145	Human Growth and Development— The Life Span	3
MAT 150	Introduction to Probability and Statistics	3
or MAT 121	Mathematics for Allied Health	3
		18

Summer Semester (for LPNs only)		Credits
ADN 173	Advanced Transition into Associate Degree Nursing	5
		5**

Either Third or Fourth Semester		Credits
ADN 205	Meeting the Expanding Family's Needs	5
ADN 215	Meeting the Developing Family's Needs	5
BIO 220	Introduction to Microbiology	4
SOC 150	Introduction to Sociology	3
or SOC 151	Modern Social Problems	3
		17

Either Third or Fourth Semester		Credits
ADN 225	Meeting Human Psychosocial Needs	5
ADN 235	Meeting Complex Adult Health Needs	5
ADN 245	Meeting the Changing Role in the Evolving Healthcare System	2
ENG 106	Introduction to Literature	3
Elective	Social Science/Humanities	3
or ENG 111	Speech	3
		18
Credit Total		72

Students may elect to study general education courses on a part-time basis; however, doing so does not guarantee admission to the ADN program.

To continue in the program, students must maintain a minimum GPA of 2.20 and earn a C+ or better in all nursing courses. Students must earn a grade of "C" or better in required general education requirements to graduate. Students who have earned a "D" or "F" or have withdrawn are readmitted on a space-available basis only. A student may repeat only one nursing course (prefix ADN) in which a "D" or "F" grade has been earned. Requirements of the program will be the requirements at the time of readmission.

*With approval of Dean of Students or Director of Registration/Student Records.

**Prerequisite: BIO 163, BIO 164, PSY 140, ENG 105;
Corerequisite: PSY 145, MAT 150.

See page 14 for special program admission requirements pertaining to this program.

SCHOOL OF HEALTH CARE SCIENCES

Occupational Therapy Assistant A.A.S. (OTA)

The Occupational Therapy Assistant Associate Degree program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA).

Graduates of the Occupational Therapy Assistant (OTA) program are prepared for entry-level employment as OTAs and are eligible to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT, www.nbcot.org). After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

The OTA program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE, www.acoteonline.org) of the American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449; ACOTE's telephone number, c/o AOTA, is 301-652-2682. The COTA functions under the direct or general supervision of an Occupational Therapist (OTR), in evaluating, planning, and implementing programs to retrain or to develop the patient's performance in self-care, work, and leisure skills. COTAs treat patients in mental health facilities, rehabilitation hospitals, school systems, hand clinics, nursing homes, and home health settings.

AOTA requires that all OTA students complete their Level II Fieldwork within 18 months following completion of academic preparation.

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

- provide the services expected of an entry-level OTA.
- assist in management of delivery of occupational therapy as a member of the healthcare team in a variety of settings.
- utilize the COTA/OTR supervision process and professional and educational resources to improve and increase knowledge and professional techniques to function effectively as a certified OTA.
- demonstrate a professional manner, abide by the policies and procedures of the facility, and practice the ethics of the occupational therapy profession.
- address the health needs of individuals, communities, and society as a whole by assisting in community wellness and prevention programs.
- utilize effective verbal and nonverbal communication skills to participate in the profession and society.
- develop self-confidence and accountability to assume professional behaviors.
- recognize education is a lifelong commitment to continued personal and professional development.
- practice within the ethical parameters of the occupational therapy profession.
- take an active role in student and professional organizations.
- recognize individual differences and develop positive attitudes from this awareness.
- demonstrate a holistic awareness of each individual and understand individual differences in adaptive responses.
- adopt individualized learning when caring for individuals with diverse cultural, socioeconomical, and environmental needs.
- collaborate with client/patient and other healthcare providers to enhance occupational therapy service delivery.

See page 17 for special program admission requirements pertaining to this program.

First Semester		Credits
OTA 101	Introduction to Occupational Therapy	3
OTA 103	Therapeutic Media	3.5
BIO 163	Anatomy and Physiology I	4
ENG 105	Research and Composition	3
PSY 140	Introduction to Psychology	3
		16.5
Second Semester		
OTA 110	Intervention in Occupational Therapy	3.5
OTA 116	Principles of Treatment in Adult/ Geriatric Rehabilitation	3.5
OTA 205	Medical Conditions	3
BIO 164	Anatomy and Physiology II	4
PSY 145	Human Growth and Development	3
		17
Third Semester		
OTA 211	Occupational Therapy in Mental Health	4
OTA 217	Principles of Treatment in Adult/ Pediatric Rehabilitation	4
OTA 223	Therapeutic Adaptations/Techniques in Occupational Therapy	3
OTA 229	Supervision in Occupational Therapy	2
ENG 106	Introduction to Literature	3
SOC 150	Introduction to Sociology	3
		19
Fourth Semester		
OTA 240	Fieldwork Experience	12
		12
Credit Total		64.5

Students are required to achieve at least a "C" in all OTA and other required courses to continue in the program, and must achieve a GPA of 2.3 in all OTA (OTA prefix) courses to be eligible to register for OTA-240. OTA courses must be taken in sequence.

Students who have earned a "C-", "D" or "F" or have withdrawn are readmitted on a space available basis only, according to the readmission procedure. Requirements of the program will be the requirements at the time of readmission. A student may repeat only one OTA course in which a "C-", "D" or "F" grade has been earned. Students must successfully complete all fieldwork level I in the semester assigned. A student may repeat only one failed fieldwork while in the OTA program.

List of Demands/Abilities Required for Students:

OTA 103, OTA 110, OTA 116, OTA 211, OTA 217 and OTA 240 require a student to possess the following abilities. The activities suggested are some examples of the application of these abilities. A student requesting adaptations or accommodations due to a disability should contact the Office of Disability Support Services at 610-799-1190.

The student should possess the ability to:

1. Transfer and mobilize non-ambulatory patients, perform dynamic standing balance to assist instable patients.
2. Lift 50 lbs.
3. Push/pull wheelchair with up to 250 lbs.
4. Stand/walk for up to 2-3 hours at a time.
5. Perform gross/fine motor tasks, such as: therapeutic exercise, performing activities of daily living for clients unable to provide self-care, completing treatments, documenting care provided.
6. Read and comprehend health information records, labels on medication containers, and calibrations on devices used in making physiological measurements or treatments.
7. Hear and actively listen to interpret messages not solely based on visual cues, such as: interpreting conversations, detecting Korotkoff's sounds, etc.
8. Orally communicate messages to clients and other health care providers.
9. Accurately perceive situations influencing the care of clients and to make unimpaired observations and judgments regarding personal and client safety.
10. Treat clients in diverse settings including on locked units and in confined spaces.

SCHOOL OF HEALTH CARE SCIENCES

Physical Therapist Assistant A.A.S. (PTA)

The Physical Therapist Assistant Associate Degree program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE).

This program will prepare the graduate to work under the supervision and direction of a licensed physical therapist in performing physical therapy treatments that may include the following: gait training, therapeutic exercise, mechanical traction, massage, compression, physical agents; instruction in functional activities; and the use and care of braces, prostheses, and ambulation devices.

The program includes clinical experiences under the direction and supervision of a licensed physical therapist in various healthcare facilities. Students are responsible for transportation to and from these facilities. The final clinical experience (PTA 208 Clinical Practice II) consists of two, seven (7)-week, forty (40)-hour a week sessions.

Jobs for which graduates are expected to be qualified include physical therapist assistants practicing in hospitals, outpatient and private physical therapy practices, extended healthcare facilities, rehabilitation hospitals, and children's centers.

The curriculum of Lehigh Carbon Community College PTA program is designed to:

1. Enable the student, upon completion of the program, to demonstrate safety and competency in the application of physical therapy procedures, functions and tasks under the direction and supervision of a physical therapist including the following:
 - a. Review the plan of care established by the physical therapist prior to initiating patient intervention.
 - b. Apply therapeutic exercise, mechanical traction, biofeedback, therapeutic massage, compression and bandaging, heat, cold, light, water, electricity, ultrasound, short wave diathermy, isolation techniques, and wound care using sterile technique.
 - c. Measure and adjust crutches, canes, walkers, and wheelchairs and provide instruction in their use and care.
 - d. Provide instruction, motivation, and assistance to patients and others in improving pulmonary function, performing exercises, learning and improving functional activities, such as pre-ambulation, transfer, ambulation, and daily living activities, and instruction in the use and care of orthoses, prostheses, and supportive devices.
 - e. Perform selected measurement and assessment procedures, such as arousal, mentation, and cognition, chest wall expansion and excursion, cough and sputum production, range of joint motion, gross strength of muscle groups, muscle mass, length and tone, fine motor skills, functional status, gross motor milestones, length and girth of body parts, integument integrity and color, pain, posture, self-care, sensory tests, tissue viability, wound assessment, and vital signs to collect data to quantify the patient's response to interventions as directed and supervised by the physical therapist.
 - f. Modify treatment procedures as indicated by patient response and within the limits specified in the

First Semester		Credits
BIO 163	Anatomy and Physiology I	4
ENG 105	Research and Composition	3
PHY 103	Fundamentals of Physics	4
PSY 140	Introduction to Psychology	3
PTA 101	Introduction to Physical Therapy	3
		17
Second Semester		
BIO 164	Anatomy and Physiology II	4
ENG 106	Introduction to Literature	3
PTA 102	Applied Kinesiology	3.5
PTA 103	Physical Therapy Procedures I	3
PTA 201	Medical-Surgical Orientation to Clinical Practice	3.5
		17
Third Semester		
PTA 200	Selected Topics in Physical Therapy	2
PTA 202	Clinical Practice I	1
PTA 203	Physical Therapy Procedures II	3
PTA 205	Therapeutic Exercise	4
PTA 206	Rehabilitation	3.5
SOC 150	Introduction to Sociology	3
		16.5
Fourth Semester		
PTA 208	Clinical Practice II	12
		12
Credit Total		62.5

Students are required to achieve at least a "C" in all PTA major courses to continue in the program and must achieve a minimum GPA of 2.0 and minimum PTA major GPA of 2.50 to register for PTA 208 Clinical Practice. PTA courses must be taken in the proper sequence. First and third semester PTA courses are offered in the fall; second and fourth semester PTA courses are offered in the spring. All PTA courses are offered in the daytime.

Students who have failed or withdrawn are re-admitted on a space-available basis only, according to the readmission procedure. Students may repeat a failed PTA course one time and only with the permission of the program director. Requirements will be the requirements at the time of readmission.

- physical therapist's plan of care, and report orally and in writing to the physical therapist.
- g. Communicate with members of physical therapy staff and other health team members, individually and in conference, to provide patient information.
- h. Participate in routine administrative procedures required for a physical therapy service.
2. Increase students' sensitivity to cultural and socioeconomic issues.
3. Introduce students to the importance of continued competence and professional growth through the core professional values of accountability, altruism, compassion/caring, excellence, integrity, professional duty, and social responsibility.
4. Foster the students' ability to engage in problem solving, critical thinking, and ethical decision making.
5. Prepare the graduate to pass the national licensure examination for PTAs.

See page 18 for special program admission requirements pertaining to this program.

SCHOOL OF HEALTH CARE SCIENCES

Practical Nursing Certificate (NURC)

The Practical Nursing Certificate program is fully accredited by the Accreditation Commission for Education in Nursing Inc. (ACEN).

The Practical Nursing Certificate program maintains full approval status with the Pennsylvania State Board of Nursing.

This is an integrated college program spanning three semesters.

The program is fully approved by the PA State Board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, Ga. 30326; 404-975-5000; www.acenursing.org. Upon completion of the approved curriculum, the graduate receives a certificate as a practical nurse. Once the graduate successfully completes the Virtual ATI NCLEX-RN review course they are eligible to sit for the National Council Licensing Examination-Practical Nursing (NCLEX-PN).

The Practical Nursing graduate is prepared to assist in caring for medical and surgical patients, convalescents, and the disabled. Rewarding work experiences are available in extended care facilities, private homes, public health agencies, offices, and clinics. Advanced standing is available for those students who fulfill the necessary requirements. This advanced standing is awarded for NUR 106 only.

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

- integrate the concepts of person, environment, health, nursing, and basic needs to assist with the assessment, planning, implementation, and evaluation of individuals, families, and groups across the life span.
- understand the cultural/spiritual needs of a diverse population within a dynamic healthcare system.
- utilize critical thinking to implement the nursing process as a framework for the delivery of cost-effective, outcome-based nursing care to individuals, families, or groups.
- develop the ability to use therapeutic communication and technology to promote, restore, or maintain the health of individuals, families, or groups.
- recognize the need for lifelong learning and the active participation in continued professional development.
- demonstrate the core competencies of a graduate of practical nursing.
- practice within the ethical/legal standards of nursing care developed by the National Federation of Licensed Practical Nurses Inc. and according to the state wherein employed.
- assume the roles of caregiver, interdisciplinary team member, manager, and community partner, as well as the responsibilities inherent in the scope of practical nursing as defined by the state wherein employed.
- employ the teaching-learning process to promote the optimum health of individuals, families, or groups within a framework of prevention and wellness care.

First Semester (fall) Credits

NUR 106	Nursing I	11
BIO 163	Anatomy and Physiology I	4
PSY 140	Introduction to Psychology	3
		18

Second Semester (spring)

NUR 116	Nursing II	11
BIO 164	Anatomy and Physiology II	4
PSY 145	Human Growth and Development	
or		
ECE 120	Children's Growth and Development	3
		18

Third Semester (summer)

NUR 126	Nursing III	12
SOC 150	Introduction to Sociology	
or		
SOC 151	Modern Social Problems	3
		15

Credit Total 51

The student must earn a grade of "C" or better in all courses required for the Practical Nursing program to progress and graduate. A student may repeat only one nursing course (prefix NUR) in which a "C-", "D" or "F" grade has been earned. Requirements will be the requirements at the time of readmission.

Students planning to enroll part-time are strongly advised to complete all general education courses prior to registering for nursing courses.

Special program costs include health examinations, supplies, uniforms, standardized examinations, insurance and immunizations.

See page 18 for special program admission requirements pertaining to this program.

SCHOOL OF HEALTH CARE SCIENCES

Respiratory Care A.A.S.

In cooperation with Reading Area Community College
The Respiratory Care Associate Degree program,
through an agreement with Reading Area Community
College, is accredited by the Committee on
Accreditation for Respiratory Care (COARC).

The associate degree program in Respiratory Care prepares the student to assume responsible positions as part of the health care team. The graduate will be eligible to sit for the National Registry Examination, administered by the National Board for Respiratory Care (N.B.R.C.). Respiratory care students participate in various classroom, laboratory and clinical experiences. The laboratory provides students the opportunity for hands-on experience in preparation for clinical practicum. The classroom courses give the student the foundational knowledge in Respiratory Care.

The student from Lehigh Carbon Community College who has successfully completed specific general education requirements at LCCC and specific program requirements at RACC may be granted admission to the Respiratory Care Program per stated selective admission requirements at Reading Area Community College. The student must see advisor or transfer counselor.

Reading Area Community College (RACC) will accept and grant credit for Lehigh Carbon Community College's courses that are listed as equivalent if the student has completed the course with a grade of "C" or higher.

Program Competencies:

- Provide, under medical direction, treatment, management, diagnostic evaluation and care to patients with deficiencies and abnormalities of the cardiorespiratory system.
- Administer the therapeutic use of the following: medical gases and administration apparatus, environmental control systems, humidification, aerosols, medications, ventilatory support, bronchopulmonary resuscitation and airway management.
- Demonstrate behavior consistent with acceptable professional conduct standards such as appearance, quality of work, quantity of work, continuing education, human relations skills, leadership skills, reading skills, writing skills and verbal communication skills.

Lehigh Carbon Community College equivalent courses to transfer:

ENG 105	Research and Composition	3
ENG 111	Speech	3
or ENG 107	Writing in the Workplace	3
MAT 105	Intermediate Algebra	3
or MAT 125	Fundamentals of Math I	3
or MAT 120	Survey of Math	
MAT 160	College Algebra	3
or MAT 150	Intro. to Prob. & Statistics	3
SOC 150	Introduction to Sociology	3
or PSY 140	Introduction to Psychology	3
PHI 201	Introduction to Philosophy	3
or PHI 205	Introduction to Ethics	3
BIO 163	Anatomy & Physiology I	4
BIO 164	Anatomy & Physiology II	4
BIO 220	Introduction to Microbiology	4
CIS 105	Introduction to Computers & Applications	3
Credit Total		33

The following classes are to be taken at Reading Area Community College upon acceptance into the clinical portion of the Respiratory Care Program:

Fall Semester

RES 150	Respiratory Care 1	5
RES 212	Pharmacology	2

Spring Semester

RES 200	Cardiopulmonary Anatomy & Physiology	2
RES 227	Respiratory Care II	8

Summer Semester

RES 237	Respiratory Care III	3
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Fall Semester

RES 255	Respiratory Care IV	10
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Spring Semester

RES 265	Respiratory Care V	12
Credit Total		42

See page 19 for special program admission requirements pertaining to this program.

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

General Studies A.A. (GSAA)

The General Studies degree prepares students for transfer to a four-year college or university. Students study a balanced program of humanities, mathematics, science, and social science courses as a foundation for further learning. Students are urged to consult with an academic advisor or counselor to ensure that the courses selected meet LCCC requirements and those of the four-year college or university to which transfer is intended.

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

- demonstrate critical thinking and problem-solving skills.
- analyze intricate problems involving unclear possibilities.
- employ effective methods of research.
- apply information literacy skills.
- effectively use written and oral communication skills.
- discuss the differences in human cultures.

Students should consult the catalog of the four-year college or university to which he or she plans to transfer to ensure that degree requirements are being properly met. Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

An exception to the physical education requirement is available for students who have a physician complete an official LCCC medical waiver form. Waivers are granted solely on the basis that a physical limitation makes even very moderate activity non-beneficial to the participant. Waiver forms must be completed at least one full semester prior to the student's graduation. Request for a waiver should be directed to the Associate Dean of Professional Accreditation and Curriculum.

First Semester		Credits
ENG 105	Research and Composition	3
Elective	Social Science/Humanities (101 or higher)	3
Elective	Mathematics	3-4
Electives	General Education (101 or higher)	6
		15-16
Second Semester		
ENG 106	Introduction to Literature	3
Elective	Social Sciences/Humanities (101 or higher)	3
Electives	General Education (101 or higher)	6
Elective	Free Elective (101 or higher)	3
		15
Third Semester		
Elective	Social Sciences/Humanities (201 or higher)	3
Electives	General Education (201 or higher)	6
Electives	Free Electives (101 or higher)	6
		15
Fourth Semester		
Electives	General Education (201 or higher)	6
Elective	Free Elective (101 or higher)	3
Elective	Laboratory Science	4-5
Elective	Free Elective (101 or higher)	3
		16-17
Credit Total		61

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

Liberal Arts A.A. (LIBA)

The Liberal Arts degree program fosters strong thinking skills towards a dually purposed goal: to prepare students to be active citizens in a strong democracy and to develop the intellectual skills that employers desire. Students will take up study in a diversity of courses that provide, in addition to these skills, a foundational set of knowledge that forms a strong basis for further academic study.

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

- demonstrate creativity and critical thinking.
- analyze intricate problems involving unclear possibilities.
- employ effective methods of research.
- effectively use written and oral communication skills.
- develop and apply problem-solving skills.
- interpret how systems work in the natural world.
- evaluate ethical aspects of decision-making.

Students intending to transfer and major in a particular discipline, such as **English, history, political science or sociology**, should seek advisement from their academic advisor and from faculty in that field.

Students should consult the catalog of the four-year college or university to which he or she plans to transfer to ensure that degree requirements are being properly met. Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

An exception to the physical education requirement is available for students who have a physician complete an official LCCC medical waiver form. Waivers are granted solely on the basis that a physical limitation makes even very moderate activity non-beneficial to the participant. Waiver forms must be completed at least one full semester prior to the student's graduation. Request for a waiver should be directed to the Associate Dean of Professional Accreditation and Curriculum.

First Semester		Credits
ENG 105	Research and Composition	3
SDS 106	Liberal Arts First Year Seminar	1
Elective	Physical Education	1
Elective*	Mathematics	3-4
Elective	Lab Science	4-5
Elective+	Social Science	3
		15-17
Second Semester		
ENG 106	Introduction to Literature	3
ENG 111♦	Speech	3
Elective*	Mathematics	3-4
Elective	Social Science/Humanities (101 or higher)	3
Elective□	Social Science/Humanities	3
		15-16
Third Semester		
Elective●	Social Science/Humanities (201 or higher)	3
Elective†	Literature	3
Elective‡	Social Science	3
Elective#	General Education	3
Elective◇	Humanities	3
		15
Fourth Semester		
Elective❖	Social Science/Humanities/Science/Mathematics	3-5
Elective❖	Social Science/Humanities/Science/Mathematics	3-5
Elective	Science	3-5
Elective○	Free Elective	3
Elective○	Free Elective	3
		15-19
Credit Total		60

*MAT 105, 120, 150, 155, 160, 165, 170, 191, 196, 201, 230 (MAT 150 recommended).

+PSY 140 or SOC 150.

♦Or CMN 105, CMN 112, CMN 120

□HIS 123, HIS 124, HIS 130, HIS 131, GEO 110, GEO 115, (PSC 130 recommended).

●200-level course that builds upon the 101 or higher level course taken in the second semester.

†200-level courses only; ENG 225 and ENG 235 may not be used to fulfill this requirement.

‡PSC 235, PSC/ECO 237 or ECO 201 recommended.

#Foreign language or ASL courses recommended; otherwise 200-level course.

◇ Any PHI prefix course, ART 101, ART 212, MUS 101 or MUS 107.

❖200-level courses recommended.

○200-level courses recommended or Studio Art courses.

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

Psychology A.S. (PSYS)

The psychology program is designed for students preparing to enter a program at a four-year college or university, leading to a baccalaureate degree within the diverse field of psychology.

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

- explain why psychology is a science.
- demonstrate critical thinking, skeptical inquiry, and apply the scientific approach to solving problems.
- describe and apply psychological principles.
- demonstrate information competence and the ability to use computers and other technology for many purposes.
- communicate effectively in a variety of forms.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
ENG 105	Research and Composition	3
PSY 105	Psychology as a Major	1
PSY 140	Introduction to Psychology	3
MAT 150	Probability and Statistics	
or MAT 155	Finite Mathematics for Business and Social Science	
or MAT 160	College Algebra	3
SOC 150	Introduction to Sociology	3
Elective ⁺	Humanities	3
		16
Second Semester		
BIO 101*	Introduction to Biology	4
ENG 106	Introduction to Literature	3
PSY 106	Writing in APA Style	1
PSY 145	Human Growth and Development	
or PSY 242	Child Development	3
Elective ⁺	Humanities	3
		14
Third Semester		
PHI 205	Ethics	3
PSY 109	Reading and Understanding Research	1
PSY 243	Abnormal Psychology	
or PSY 283	Social Psychology	3
PSY 255	Introduction to Statistical Analysis	4
Elective	Science/Mathematics	3-5
Elective	Humanities/Social Sciences	3
		17-19
Fourth Semester		
ENG 111	Speech	3
PSY 256	Research Methods in Psychology	4
Elective [◆]	General Education	3
Elective	Humanities/Social Sciences	3
		13
Credit Total		60

*Students should consult the requirements of the four-year college or university to determine the requirements for laboratory science.

⁺Students planning to transfer to a Bachelor of Arts program are strongly encouraged to complete a two-semester World Language sequence; however, consult with academic advisors to ensure that course selection will meet educational goals.

[◆]Students should consult the requirements of the four-year college or university to determine their requirements for general education.

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Biology A.S. (BIOS)

The Biology program is intended for students who plan to transfer in the following areas of study: Allied Health, Biochemistry, Biology, Biomechanical Engineering, Chiropractic, Dentistry, Ecology, Environmental Biology, Genetics, Marine Biology, Medical Technology, Medicine, Molecular Biology, Optometry, Pharmacy, Veterinary Medicine, or related areas.

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

- understand concepts, laws, and principles of natural science and apply them to the solution of problems.
- demonstrate good experimental techniques, including making observations and measurements, constructing a hypothesis and designing an experiment to test it, and analyzing and interpreting experimental results.
- demonstrate effective communication skills, including the writing of laboratory reports based on experiments.
- demonstrate effective teamwork and work ethics through group laboratory projects.
- demonstrate competency in use of the international system of units.
- demonstrate effective library research skills.
- evaluate issues that impact biology, such as evaluating the developmental policies, legal or health policies.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
BIO 110	General Biology I	4
CHE 111	General Chemistry I	4
ENG 105	Research and Composition	3
Elective*	Mathematics	3-4
ENG 111	Speech	3
		17-18

Second Semester		Credits
BIO 111	General Biology II	4
CHE 112	General Chemistry II	4
ENG 106	Introduction to Literature	3
Elective*	Mathematics	3-4
Elective	Social Science	3
		17-18

Third Semester		Credits
CHE 205	Organic Chemistry I	4
Elective ⁺	Biology	4
Elective	Humanities	3
Elective♦	Mathematics/Science	3-5
		14-16

Fourth Semester		Credits
CHE 206	Organic Chemistry II	4
Elective ⁺	Biology	4
Elective	Social Science	3
Elective	Humanities	3
		14

Credit Total 62

Students should consult their advisor and transfer four-year college or university for the most appropriate courses.

*MAT electives the student must choose from include MAT 160, 165, 170, 191, 196 or higher.

⁺BIO electives the student must choose from include BIO 137, 205, 218 or 220.

♦Math/Science electives the student must choose from include MAT courses 150 or higher. MAT 188 and MAT 203 may not be used to fulfill this requirement. Science courses (AST, BIO, CHE, PHY) must be numbered higher than 112, with the exception of AST 105. Students interested in pursuing continued education in plant science or horticulture should speak to a faculty advisor and check with the transfer institution about appropriate electives.

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Chemical Technology A.A.S. (CHT)

This program prepares students to work with chemicals and chemical instrumentation safely and effectively. Graduates are qualified to enter the chemical industry as chemical laboratory technicians. With experience, supervisory positions in the chemical industry may be assumed.

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

- demonstrate an understanding of chemical principles and concepts.
- show proficiency in the practice and theory of modern scientific instrumentation.
- demonstrate facility with direct acquisition of data to computers and computerized instrumentation.
- demonstrate literacy in data manipulation and analysis using computerized spreadsheets and graphing programs.
- show the ability to work in a typical chemistry lab while following appropriate safety procedures and laws.
- show the ability to work both independently and collaboratively on a wide variety of projects.
- demonstrate the ability to apply results of previous research to new experimental applications.
- demonstrate the ability to communicate results both orally and through written reports in an effective and efficient manner.
- apply statistics to analyze the credibility of scientific results.
- apply all steps of the scientific method to research, design, perform, and report on a solution to a scientific problem.

First Semester		Credits
CHE 111	General Chemistry I	4
CIS 105	Introduction to Computers and Applications	3
ENG 105	Research and Composition	3
MAT 160	College Algebra	3
Elective	Social Science/Humanities	3
		16
Second Semester		
CHE 112	General Chemistry II	4
ENG 107	Writing in the Workplace	3
or ENG 106	Introduction to Literature	
MAT 150	Introduction to Probability and Statistics	3
PHY 110	Elements of Physics	4
Elective	Social Science/Humanities	3
		17
Third Semester		
CHE 107	Chemical and Laboratory Safety	2
CHE 205	Organic Chemistry I	4
CHE 211	Instrumental and Quantitative Analysis I	4
Elective*	Course numbered 101 or higher	3
		13
Fourth Semester		
CHE 206	Organic Chemistry II	4
CHE 209	Polymer Chemistry	3
CHE 212	Instrumental and Quantitative Analysis II	4
Elective	Course numbered 101 or higher	3-5
		14-16
Credit Total		60

*Recommended elective is ENG 111.

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Chemistry A.S. (CHMS)

The Chemistry program is intended for students who plan to transfer in the following areas of study: Biochemistry, Chemistry, Chemical Engineering, Environmental Science, Geology, Medicine, Veterinary Medicine, or related areas.

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

- understand concepts, laws, and principles of natural science and apply them to the solution of problems.
- demonstrate critical thinking/problem-solving abilities.
- demonstrate good experimental techniques, including making observations and measurements, constructing a hypothesis and designing an experiment to test it, and analyzing and interpreting experimental results.
- demonstrate effective communication skills, including the writing of laboratory reports based on experiments.
- demonstrate effective teamwork and work ethics through group laboratory projects.
- demonstrate the ability to apply mathematical skills to the level of at least college Algebra.
- demonstrate an ability to work with computers, including word processing and spreadsheet applications.
- demonstrate competency in use of the international system of units.
- demonstrate effective library research skills.
- have a general education base for the social sciences and humanities.
- have a foundation for continuing learning and the competencies necessary to solve new problems as they arise.
- have a background sufficient to transfer to a four-year college or university to earn a Bachelor of Science degree.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CHE 111	General Chemistry I	4
ENG 105	Research and Composition	3
MAT 191	Calculus and Analytic Geometry I	4
Elective	Social Science/Humanities	3
		14
Second Semester		
CHE 112	General Chemistry II	4
ENG 106	Introduction to Literature	3
MAT 196	Calculus and Analytic Geometry II	4
PHY 210	General Physics I	5
		16
Third Semester		
BIO 110	General Biology I	4
CHE 205	Organic Chemistry I	4
PHY 215	General Physics II	5
Elective	Social Science	3
		16
Fourth Semester		
BIO 111	General Biology II	4
CHE 206	Organic Chemistry II	4
CIS 155	Introduction to Computer Science - Structured Programming - C++	3.5
Elective	Humanities	3
		14.5
Credit Total		60.5

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Engineering A.S. (EGRS)

This pre-professional program has its foundation in mathematics and the physical and natural sciences. Upon completion of the program, the student has the option of pursuing a bachelor's degree in aeronautical, chemical, civil, electrical, industrial, mechanical, or nuclear engineering at a four-year college or university.

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

- demonstrate an understanding of concepts, physical laws, and basic principles and apply them in the solution of problems in engineering mechanics, engineering physics, and college-level chemistry.
- analyze a problem in a simple and logical manner.
- develop experimental techniques in making measurements in the laboratory, analyzing and interpreting experimental results, and determining errors in measurements and results.
- demonstrate mathematical skills to the level of a completed course sequence in calculus and analytical geometry.
- solve elementary engineering problems on the computer using an object-oriented programming language.
- perform basic drafting techniques and understand industrial-type drawings.
- communicate effectively, particularly in written laboratory reports.
- have a general education base for the social sciences and humanities.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CHE 111	General Chemistry I	4
EGR 102	Engineering Orientation	1
ENG 105	Research and Composition	3
MAT 191	Calculus and Analytic Geometry I	4
Elective	Humanities	3
		15
Second Semester		
CHE 112	General Chemistry II	4
EGR 101	Engineering Graphics	4
MAT 196	Calculus and Analytic Geometry II	4
PHY 210	General Physics I	5
		17
Third Semester		
EGR 213	Statics	3
MAT 201	Calculus and Analytic Geometry III	4
PHY 215	General Physics II	5
Elective	Social Science	3
		15
Fourth Semester		
CIS 155	Introduction to Computer Science-Structured Programming-C++	3.5
EGR 214	Dynamics	3
ENG 106	Introduction to Literature	3
Elective	General Education	3-4
Elective	Social Science/Humanities	3
		15.5-16.5
Credit Total		62.5

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Environmental Science A.S. (ENVS)

The environmental science program will provide graduates with an integrative study of natural systems and the effects of selective pressures, both natural and manmade, that continue to shape these systems. Students that complete this program will be prepared to either enter a four-year program leading to a baccalaureate degree or enter the workforce as an entry-level environmental scientist.

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

- understand the basic science principles and use of the scientific method.
- understand the science behind environmental problems and solutions.
- integrate other subject areas into their understanding of how humans can damage, preserve, or remediate the environment.
- articulate and foster awareness of how human decisions can affect the environment.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
BIO 110	General Biology I	4
CHE 111	General Chemistry I	4
ENG 105	Research and Composition	3
ENG 111	Speech	3
MAT 160	College Algebra	3
		17
Second Semester		
BIO 111	General Biology II	4
CHE 112	General Chemistry II	4
ENG 106	Introduction to Literature	3
MAT 165	College Trigonometry	3
Elective	Social Science	3
		17
Third Semester		
CHE 205	Organic Chemistry I	4
BIO 137	Introduction to Environmental Science	4
PHY 201	Physics I	4
Elective	Humanities	3
		15
Fourth Semester		
BIO 116	Topics in Ecology	3
MAT 150	Introduction to Probability and Statistics	3
Elective*	Course numbered 101 or higher	3-5
Elective	Social Science/Humanities	3
Elective ⁺	Laboratory Science	4
		16-18
Credit Total		65

Recommended electives:

*GIS 110

⁺BIO 115, BIO 205, BIO 220, CHE 206, PHY 202

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Exercise Science A.S. (EXSS)

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

Graduates of such baccalaureate programs find employment in health, wellness, health management, health center and fitness center program management, corporate health and wellness programs, health and physical education teaching, exercise physiology teaching and research, medical exercise rehabilitation programs, adult fitness programs and related fields. The curriculum includes general education requirements, a basic science and math foundation and a broad base in discipline-related courses such as exercise physiology, nutrition, kinesiology and exercise measurement and prescription. In addition, the program will prepare the students to sit for nationally accredited exams in the field of exercise science such as the American College of Sports Medicine (ACSM) and the National Strength and Conditioning Association (NSCA).

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

- take advanced academic work at a four-year institution in one of the exercise science professions.
- sit for nationally accredited exams in the field of exercise science (ACSM, NSCA, etc.).
- conduct complete fitness assessments and prescribe exercise programs to the public.
- recognize how the body works and how it is affected by environmental factors
- recognize liability issues facing the student as they go to work in this “hands-on” profession

First Semester		Credits
ENG 105	Research and Composition	3
EXS 101	Introduction to Exercise Science	3
HPE 101	Personal and Community Health	2
MAT 150	Introduction to Probability and Statistics	
or MAT 160	College Algebra	3
Elective	Physical Education	1
Elective	Humanities	3
		<hr/> 15
Second Semester		
ENG 106	Introduction to Literature	3
EXS 102	Exercise Measurement & Prescription	3
BIO 163	Anatomy and Physiology I	4
SPM 102	Sport History and Philosophy	3
Elective	Social Science	3
		<hr/> 16
Third Semester		
EXS 103	Methods of Instruction and Personal Training	3
EXS 107	Care and Prevention of Athletic Injuries	3
BIO 164	Anatomy and Physiology II	4
Elective	Physical Education	1
Elective	Social Sciences/Humanities	3
		<hr/> 14
Fourth Semester		
ENG 111	Speech	3
EXS 105	Kinesiology	3
SPM 103	Science and Wellness	3
BIO 124	Nutrition	3
Elective	Free Elective	3-5
		<hr/> 15-17
Credit Total		60

Recommended electives: CHE 111; CIS 105; PED 110, 143, 165; PSY 140; SOC 150.

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Health Science A.S. (HSCS)

The Associate in Science Health Science degree is a comprehensive yet flexible transfer program designed to provide students with foundational courses in social and health sciences as well as a variety of general education electives for transfer to four-year colleges and universities. The baccalaureate programs to which students may transfer include nursing, health science, nutrition, pharmaceutical marketing, health information management, public and community health and health services administration.

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

- develop an understanding of various career options in healthcare.
- demonstrate comprehension of human and biological systems.
- understand the laws and principles of science and apply them to the solution of problems.
- acquire knowledge of the theories of human behavior as they relate to psycho-social development.
- develop critical thinking and analytical skills through study of social sciences and humanities.
- have an academic background sufficient to transfer to a four-year college or university to earn a bachelor of science degree.

First Semester		Credits
ENG 105	Research and Composition	3
BIO 163	Anatomy and Physiology I	4
PSY 140	Introduction to Psychology	3
SDS 105	Exploration of Health Science Careers	1
Elective	PED	1
Elective	General Education	3
		15
Second Semester		
ENG 106	Introduction to Literature	3
BIO 164	Anatomy and Physiology II	4
PSY 145	Human Growth and Development	3
Elective*	Mathematics	3
Elective	Humanities	3
		16
Third Semester		
SOC 150	Introduction to Sociology	3
Elective	Laboratory Science	4-5
Elective	Humanities	3
Elective**	Free Elective	3
Elective	General Education	3
		16-17
Fourth Semester		
Elective	Laboratory Science	4-5
Elective	General Education	3
Elective	Science	3-5
Elective**	Free Elective	3
		13-16
Credit Total		60

Students should check with four-year college or university for the most appropriate transfer courses.

Suggested General Education and Social Science/
Humanities Electives: ASL 101, ASL 105, BIO 105, CMN 105, ENG 111, PHI 205, PSY 242, PSY 243, SOC 151, SPN 105, SPN 106

*Except MAT 121, no math course below MAT 150.

**Suggested HIT 120 or appropriate transfer courses.

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Mathematics A.S. (MATS)

This program is intended for students with an interest and an aptitude in mathematics who plan to transfer to a four-year college or university to prepare for a baccalaureate degree in mathematics.

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

- demonstrate problem solving skills using calculus and analytic geometry.
- apply mathematics in real world settings throughout the required mathematics courses.
- apply graphing and numerical tools available on calculators, computers or other technologies.
- interconnect mathematical skills with other subject areas.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CIS 155	Introduction to Computer Science – Structured Programming – C++	3.5
ENG 105	Research and Composition	3
MAT 191	Calculus and Analytic Geometry I	4
Elective*	Social Science	3
Elective ⁺	General Education	3
		<hr/> 16.5
Second Semester		
ENG 106	Introduction to Literature	3
MAT 203	Discrete Mathematics	3
MAT 196	Calculus and Analytic Geometry II	4
PHY 210	General Physics I	5
		<hr/> 15
Third Semester		
MAT 201	Calculus and Analytic Geometry III	4
PHY 215	General Physics II	5
ENG 111	Speech	3
Elective*	Social Science	3
		<hr/> 15
Fourth Semester		
MAT 230	Differential Equations With Linear Algebra	4
PHI 205	Introduction to Ethics	3
Elective ⁺	General Education	7-9
		<hr/> 14-16
Credit Total		60.5

Requirements/Recommendations

Social Science Elective must be chosen from the following list:

*ECO 201 and ECO 202 (recommended), PSC 141, PSY 140, PSY 145, PSY 240, PSY 242, SOC 150, SOC 151, SOC 258.

⁺MAT 150 recommended as a General Education Elective.

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Physics A.S. (PHYS)

The Physics program is intended for students who plan to transfer in the following areas: Astronomy, Biophysics, Engineering, Geology, Medicine, Meteorology, Physics, or related areas.

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

- understand concepts, law, and principles of natural science and apply them to the solution of problems.
- demonstrate critical thinking/problem solving abilities.
- demonstrate good experimental techniques including making observations and measurements, constructing a hypothesis and designing an experiment to test it, and analyzing and interpreting experimental results.
- demonstrate effective communication skills including the writing of laboratory reports based on experiments.
- demonstrate effective teamwork and work ethics through group laboratory projects.
- demonstrate the ability to apply mathematical skills to the level of at least calculus.

Transfer information for this program is on file in the Transfer Center. For more information, contact an academic advisor or counselor.

First Semester		Credits
CHE 111	General Chemistry I	4
ENG 105	Research and Composition	3
MAT 191	Calculus and Analytic Geometry I	4
Elective	Social Science	3
Elective	Humanities	3
		17
Second Semester		
CHE 112	General Chemistry II	4
ENG 106	Introduction to Literature	3
MAT 196	Calculus and Analytic Geometry II	4
PHY 210	General Physics I	5
		16
Third Semester		
BIO 110	General Biology I	4
EGR 213	Statics	3
MAT 201	Calculus and Analytic Geometry III	4
PHY 215	General Physics II	5
		16
Fourth Semester		
BIO 111	General Biology II	4
ENG 111	Speech	3
Elective	Humanities	3
Elective	Math/Science (MAT 230 Recommended)	3-4
Elective	Social Science	3
		16-17
Credit Total		65

SCHOOL OF SCIENCE, ENGINEERING AND MATHEMATICS

Veterinary Technician A.A.S. (VET)

The Veterinary Technician program is accredited by the American Veterinary Medical Association. www.avma.org/Pages/home

Veterinary technicians are professionals knowledgeable in the care and handling of animals, basic principles of normal and abnormal life processes, routine laboratory and clinical procedures, and in veterinary medical and surgical nursing. Certified veterinary technicians are employed in veterinary clinics serving large, small, and exotic species. In addition, graduates are employed as veterinary assistants in pharmaceutical settings, research laboratories, animal feed companies, wildlife and zoo centers, and animal shelters. The job market for formally trained veterinary technicians has been growing, and this trend is expected to continue.

Lehigh Carbon Community College, working jointly with Northampton Community College, has developed a two-year associate in applied science degree program in this field.

Coursework will provide students with a foundation in the basic principles of animal medicine and disease, anatomy and physiology, diagnostic laboratory work, surgical assisting, anesthesia, diagnostic radiology, pharmacology, veterinary medical nursing, laboratory and exotic animal medicine, and veterinary practice management. Students will be given the opportunity to develop technical skills through multiple clinical experiences with live animals.

Graduates of this program are prepared to sit for the veterinary technician national board examination. Students that pass the exam may obtain certification.

This program has received full accreditation from the American Veterinary Medical Association.

Program features: LCCC provides academic and practical experience through a combination of veterinary technology and general education core courses. One third of veterinary technology courses include laboratory experience including exposure to small, large and exotic animal species. The culminating experience of the program is a summer externship experience during which students can practice their clinical skills at veterinary hospitals. Classes are held on Northampton Community College (NCC) and LCCC campuses. There is a clinical science laboratory on NCC's campus and a veterinary teaching facility adjacent to LCCC's campus provided exclusively for the veterinary technician students. Classes are offered during the day and the program takes 2 full years (Fall, Spring and Summer to complete). For additional information, please refer to www.lccc.edu and click on Academics; Veterinary Technician.

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

- Demonstrate competence in performing and engaging in office and hospital procedures, client relations and communication.
- Demonstrate proficiency working in the pharmacy and understand and utilize pharmacologic concepts.
- Safely and competently engage in medical nursing.
- Safely and competently engage in surgical nursing.
- Safely and competently engage in anesthetic nursing.
- Competently perform laboratory procedures.
- Safely and competently perform diagnostic imaging.
- Competently perform laboratory animal and exotic patient husbandry and nursing.

First Semester		Credits
VET 101	Veterinary Anatomy and Physiology	4
VET 110	Introduction to Veterinary Technology	3
ENG 105	Research and Composition	3
CIS 105	Introduction to Computers and Applications	3
CHE 106	Physiological Chemistry	4
		17
Second Semester		
VET 115	Animal Management and Nutrition	2
VET 120	Veterinary Parasitology	2
VET 125	Veterinary Clinical Laboratory Techniques	4
BIO 220	Microbiology	4
ENG 106 or ENG 107 or ENG 108	Introduction to Literature Writing in the Workplace Creative Nonfiction	3
		15
Summer Session		
VET 210	Large Animal Clinical Procedure	3
		3
Third Semester		
VET 215	Animal Disease	3
VET 218	Veterinary Pharmacology and Anesthesia	3
VET 220	Small Animal Clinical Procedure	4
Elective*	Mathematics	3
Elective	Social Science/Humanities	3
		16
Fourth Semester		
VET 225	Veterinary Radiology and Surgical Nursing	4
VET 228	Lab Animal Science and Exotics	4
Elective	Social Science/Humanities	3
Elective	General Education	3
		14
Summer Session		
VET 230	Veterinary Technician Externship	3
		3
Credit Total		68

Electives:

Recommended: *Math electives a student must choose from include: MAT 105, MAT 121, MAT 150 or MAT 160.

Required: CHE 106 (Physiological Chemistry) - must be taken their first semester in the program or prior to starting the program. It is a prerequisite for VET 125.

Please note that admission to this program is competitive and requires a special application. Not all students will be offered a seat in the program.

All students in the Veterinary Technician program must maintain a cumulative GPA of 2.5 during the course of their program.

In addition, any student who does not successfully complete (with a grade of at least a "C") two veterinary core courses (either two different courses or the same course twice) will be withdrawn from the program. Readmission to the program will require re-application and re-acceptance through the admissions office.

Course Descriptions



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Academic Course Descriptions

The college offers courses on various levels to fulfill the concept of open-door admission and still maintain academic standards for awarding certificates and degrees. The levels and the numbering system are explained below.

Basic Courses

The purpose of these courses is to provide basic skills instruction. These courses are numbered 090, 098, 099 and 100. They are for institutional credit only and may not be used toward graduation and are not counted in the grade point average (GPA).

Course Credit

The credit value for each course is shown by the numbers following the course title. The first digit indicates the semester hours credit; the second digit indicates the lecture hours per week; the third digit indicates the laboratory hours per week; the fourth digit indicates the Clinical or Practicum or Externship or Other hours per course that a student will have to participate in during the semester."

The college defines a semester credit hour as a unit of coursework equivalent to 50 minutes of lecture instruction and student engagement per week for fourteen weeks.

The college defines a laboratory as requiring 3.0 hours of structured laboratory weekly for one semester credit hour ($54 \times 3 = 161$ minutes per week) for 14 weeks with the faculty member and the student.

The college defines an Internship and fieldwork as requiring a student to complete a minimum of up to 75 hours for one credit.

Prerequisite

A prerequisite is a course or skill level that must be completed or achieved prior to enrollment in a particular course.

Corequisite

A corequisite is a requirement that must be satisfied at the same time or before a particular course is taken.

Credit Courses

The purpose of these courses is to provide the general education and career education necessary for the certificate and degree programs. They are designated by subject area and are numbered 101 and higher. These courses are counted in the grade point average (GPA).

Developmental Courses

The purpose of these courses is to provide a review and strengthening of skills. Developmental courses are designed by the subject area and are numbered 100. Grades in 100-level courses may be counted in the grade point average (GPA).

Course Substitution

Students may petition for a course substitution by meeting with an advisor or faculty member to discuss and submit an electronic request. Students must meet eligibility requirements and follow procedures for consideration of a course substitution.

Fieldwork

An experience to gather anthropological or sociological data through the interviewing and observation of subjects in the field.

Internship

An out-of-class experience, typically for advanced students, to gain supervised practical experience in the work place.

Internships are designed to give students an opportunity to combine classroom study with practical on-the-job experience. Internships provide students the opportunity to earn academic credit while gaining experience with employers. An internship may or may not involve being awarded academic credit. Some internship experiences are paid, while some are unpaid. Students wishing to enroll in an academic credit internship should contact the appropriate program coordinator early in the semester preceding the semester in which the student wishes to register for the academic internship. Students are encouraged to contact the Career Development Center at 610-799-1559 for additional information and assistance in obtaining internship opportunities.

Clinical/Practicum

A course of study that involves the supervised practical application of previously studied theory.

Special Topics Course

These courses provide the opportunity to receive credit for special interest topics, within a subject area, which are not covered in depth within existing courses. Courses will be designated 297. Special topics courses can be used as free electives only.

Hybrid Courses

Hybrid courses blend the face-to-face instruction of a traditional class environment with the flexibility of an online course. At least 50 percent of instruction occurs in a face-to-face classroom.

Since online work is a requirement of the course, students must have access to a computer, Internet service and basic computer, Internet and email skills.

Hybrid courses are identified in the course listings by the use of "HY1" or "HY2" as the section number (for example, PSY140-HY1).

Web-Enhanced Courses

A "web-enhanced" course is a regular face-to-face class that uses the Learning Management System to deliver selected resources online.

It includes all regularly scheduled class meetings on campus **plus** course content that will be accessed via a computer with an Internet connection and may include:

- Syllabus
- Announcements
- Resources and Web-links
- Lecture notes & handouts
- Course calendar
- Course e-mail
- Discussion forums

Your instructor will let you know if they are using the Learning Management System in their class and help you understand their expectations of online use.

Quick Reference/Index of Course Codes

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BGT	200	KBD	196
BIO	161	MAT	197
BUS	164	MED	201
CED	174	MET	200
CFS	168	MTD	201
CHE	166	MUS	202
CHN	167	NET	172
CIS	169	NUR	215
CJA	174	OTA	206
CMN	168	PED	209
CON.....	173	PHI	209
CUL.....	175	PHY	213
DMP	176	PLG	207
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Course Description Key

ABC **101** **The Art of the Alphabet**
 Course Course Course Name
 Prefix Number

3 **:3** **:0** **:0**
 Total Lecture Lab Clinical Practicum Externship
 Credits Hours Hours Other Hours

Accounting

ACC 110 College Accounting 3:3:0:0

A non-transfer course emphasizing the elementary procedures of accounting relative to sole proprietorship. The theory of accounts, ledgers, and financial statements is also stressed. (Medical Assisting practice set computerized.)

ACC 160 Principles of Accounting I 3:3:0:0

Prerequisite(s): RSS 100 or a College Success Reading Score of 94 or better and MAT 090 or a College Success Algebra Score of 77 or better

An introduction to accounting, providing students with a basic understanding of the recording process as it relates to both service and merchandising businesses. Topics include methods of recording accounting data, the preparation of financial statements, and the accounting cycle.

ACC 161 Principles of Accounting II 3:3:0:0

Prerequisite(s): ACC 160 (minimum grade C or better)
 A study of the basic accounting principles for corporations. Topics include payroll, financial statement analysis, equity transactions for partnerships and corporations, long-term liabilities and investments, statement of cash flows, and an introduction to managerial accounting.

ACC 201 Intermediate Accounting I 3:3:0:0

Prerequisite(s): ACC 161 (minimum grade C or better)
 An in-depth study of the financial reporting function of the accounting process. Included are the study of current technical practices and theory pertaining to the accounting cycle, determination of income, preparation of financial statements, and accounting for assets.

ACC 202 Intermediate Accounting II 3:3:0:0

Prerequisite(s): ACC 201 (C minus grade or better)
 A continuation of Intermediate Accounting I, this course continues in-depth study of the financial reporting function of the accounting process. Includes the study of current technical practices and theory pertaining to accounting for investments, liabilities, pensions, income taxes, owners' equity, earnings per share, and the preparation of the statement of cash flows.

ACC 203 Cost/Managerial Accounting 3:3:0:0

Prerequisite(s): ACC 161 (C minus grade or better)
 A study of cost and managerial principles and procedures as applied to manufacturing organizations, as well as service organizations. Topics include cost accounting reporting systems, job order and process costing, flexible budgeting, variance analysis, cost-volume-profit analysis, and capital budgeting. Computers are utilized in class projects.

ACC 205 Income Tax Accounting 3:3:0:0

This course covers the underlying principles of the Internal Revenue Code, including the practical application of its tax rules and the preparation of income tax returns. Accounting for taxes is also covered. Students will use income tax software and the IRS website to practice preparing tax returns.

ACC 262 Accounting Information Systems 3:3:0:0

Prerequisite(s): ACC 161; CIS 105

This course introduces students to the concepts underlying information systems and their relationship to accounting functions in an organization. Students will use QuickBooks to understand information systems, planning, and systems analysis as it related to accounting.

Administrative Office Technology

AOT 112 Keyboarding I 1:1½:0:0

Lays the foundations for the development of standard keyboarding dexterity. It is the first of several courses designed to build mastery of the computer keyboard (alphabet and numbers) as an educational tool and as a marketable skill.

AOT 113 Keyboarding II 1:1½:0:0

Prerequisite(s): AOT 112 or Placement Exam
 Continues laying the foundations for the development of standard keyboarding dexterity. It is the second of several courses designed to build mastery of the computer keyboard, (alphabet, numbers, and symbols) as an educational tool and as a marketable skill.

AOT 114 Keyboarding III 1:1½:0:0

Prerequisite(s): AOT 113 or Placement Exam
 Is the third of several courses designed to build mastery of the computer keyboard, (alphabet, numbers, and symbols) as an educational tool and as a marketable skill.

AOT 115 Typing I 3:3:1½:0

Emphasis on the development of fundamental techniques that contribute to speed and accuracy. The student is introduced to extensive keying. Simple business letters and forms are practiced on a microcomputer.

AOT 116 Typing II/Formatting 3:3:0:0

Prerequisite(s): AOT 115 or Placement Exam
 Course continues the development of speed and accuracy. The student will key on a microcomputer materials produced in most offices, such as memoranda, simple business letters, data tabulations, business forms, and envelopes.

AOT 117 Keyboarding IV 1½:1½:0:0

Prerequisite(s): AOT 114, 115; or Placement Exam
 Continues the development of speed and accuracy in computer keyboarding. Provides students with the skills essential in keying letters, memorandums, manuscripts, and tables. Students will become proficient in basic word processing functions and will be able to apply those functions in production timings that will require the exercise of decision-making ability.

AOT 118 Keyboarding V 1½:1½:0:0**Prerequisite(s):** AOT 117 or Placement Exam

Continues to build keyboard and skills essential in keying business proposals, reports with columns, agendas, itineraries, news releases, and employment documents. Students will learn additional software functions and will apply advanced functions to sophisticated documents.

AOT 206 Office Procedures 3:3:0:0

Designed to prepare the administrative professional to fulfill a challenging role in today's workplace. Employees must be able to adjust to a diversified workforce with emerging technologies and be prepared to function in an expanding and global marketplace. This course equips users to better handle these changes by providing instruction and activities directed toward technology, communications, human relations, time and organization management, finances, decision making, creative thinking, and lifelong learning.

AOT 215 Medical Office Procedures 3:3:0:0**Prerequisite(s):** AOT 114 or AOT 115**Corequisite(s):** AOT 117, 118 or AOT 116; MED 102 or permission of instructor

AOT 215 introduces and simulates the procedural duties and tasks used in administrative medical offices. A specific emphasis is placed on proper preparation, especially in coding, and submission of medical insurance claims. Students will be introduced to the administrative and clerical responsibilities encountered in the medical office, including telephone skills, scheduling appointments, patient records, filing and records management, legal and financial responsibilities, and career opportunities. Students will receive hands-on practice in medical billing and insurance.

AOT 251 Advanced Medical Office Procedures 3:3:0:0**Prerequisites:** AOT 116 or 118, 215; MED 102 (grade of "C" or higher), or permission of instructor

Instruction on office/practice management software and class activities will be incorporated for hands-on learning on topics such as scheduling, records management, billing and collections, and management of the administrative and clerical functions of the medical office. Financial and legal responsibilities in the ambulatory medical practice will be examined. Students will become more proficient in coding using the ICD-10-CM, CPT, and other coding manuals targeted to the ambulatory medical office. Students will be introduced to specialized medical transcription which uses medical terms and is designed to broaden the medical vocabulary of students.

Allied Health Careers**ALH 101 Introduction to Allied Health Careers 3:3:0:0**

An introductory course to a variety of Allied Health careers. Includes information about physical therapist assisting, occupational therapy assisting, medical assisting, nursing, health information technology, and other allied health areas. Covers career exploration, generic allied health skills, and major allied health disciplines.

ALH 105 Fundamentals of Massage 1:1:0:0

Introduces students to the fundamental principles of massage.

ALH 106 Introduction to Pediatric Therapy 1:1:0:0

The history of pediatric physical therapy is discussed. Legal and social issues regarding physical therapy practice are explored. Normal human motor development is studied. Students explore a variety of pediatric diagnoses and pediatric physical therapy practice settings.

ALH 107 Introduction to Sports Physical Therapy 1:1:0:0

Designed to give students basic information regarding theory and practice of sports therapy. Included will be a review of normal anatomy and biomechanics, common sports related injuries, basic athletic taping and joint screening techniques, prevention of sports-related injuries, general conditioning, plyometrics, and sports nutrition.

ALH 110 Fundamentals of Hand Therapy for the Assistant 1½:1:1½:0**Prerequisites:** BIO 163 and either OTA 101, PTA 101, or ADN 150

Provides the student with basic foundation knowledge and skills to effectively treat a variety of common hand injuries under the supervision of either an Occupational Therapist, Physical Therapist, or Certified Hand Therapist. Selected topics include hand anatomy, common hand injuries, manual treatment techniques, physical agent modalities for hand injuries, splinting, and documentation considerations.

ALH 112 Introduction to Therapeutic Horseback Riding 3:3:6:0

Provides allied health and non-allied health students a basic foundation in using the horse as a therapeutic modality for individuals with disabilities. Includes an overview of basic horse anatomy, assessment of various horses for therapeutic suitability, basic and adaptive equipment, terminology, and client selection as well as value and applications of therapeutic technique.

American Sign Language**ASL 101 American Sign Language I 3:3:0:0**

Introduction to American Sign Language, including basic expressive and receptive skills, the manual alphabet, facial expression, and body gestures. Emphasis on conversational skills in functional situations, simple sentence structure, and knowledge of the deaf culture and community. The student must possess sufficient motor coordination to form the necessary hand-shapes and movements for American Sign Language and have sufficient visual acuity to perceive the hand-shapes and movements of American Sign Language in a classroom setting.

ASL 105 American Sign Language II 3:3:0:0**Prerequisite(s):** Successful completion of ASL 101 with at least a "C" or permission from the instructor

A continuation of the receptive and expressive communication skills learned in ASL 101. Emphasis will be on conversational skills in functional situations, continued vocabulary and sentence structure expansion, and knowledge of deaf culture and community. Students will be expected to become involved in the local deaf community.

ASL 106 American Sign Language III 3:3:0:0

Prerequisite(s): Successful completion of ASL 105 with at least a "B"

Provides further development of American Sign Language receptive and expressive skills and knowledge learned in ASL 105. Emphasis is on narrative and conversational skills in functional situations, continued vocabulary expansion, and knowledge of deaf culture and community. Students will be expected to participate regularly in activities and programs for the deaf in the local community. This is a total immersion course with no or very limited speaking.

Arabic**ARB 105 Elementary Arabic I 3:3:0:0**

Designed for students as an introduction to Arabic script and letter pronunciation; basic conversation skills; and gradual building of reading, writing, and listening skills at a beginning level. Aspects of Arab culture/history will be introduced.

ARB 106 Elementary Arabic II 3:3:0:0

Prerequisite(s): ARB 105 or equivalent

A continuation of ARB 105. This course will help students to develop basic skills in aural comprehension, speaking, reading, and writing. Basic grammatical concepts will be reviewed, and more complex grammar and sentence structures will be presented. Students will be introduced to the cultures in Arabic-speaking countries through a variety of activities.

Art**ART 101 Introduction to Art 3:3:0:0**

Surveys painting, sculpture, architecture, and other related art forms of Western culture with consideration of the aesthetic, historical, and technical significance of major artistic achievements.

ART 102 Fundamentals of Drawing and Painting 3:3:0:0

This course is divided into three basic areas. The first is the use of line and the development of form and balance. The second explores the use of shape, value, and space. The third relates to color. Through research and practice, the student gains a better understanding of design.

ART 107 Digital Design 3:3:0:0

This is a foundational course in computer graphics and digital arts that will provide students with a strong basis for any field that utilizes a computer to produce artistic work, including animation, computer game and simulation development, web development, and graphic design. Emphasis will be placed on gaining the ability to effectively utilize the Principles and Elements of Visual Design when creating projects. The students will have the opportunity to build their portfolio by designing professional, finished imagery using Adobe Photoshop. Prior knowledge in Photoshop is not necessary, though students entering this course need to have a basic understanding of computers, including how to save and organize files, how to properly use a mouse, and how to use word processing applications.

ART 108 Two Dimensional Design 3:3:0:0

This course introduces students to drawing, painting, and an in-depth exploration of the elements and principles of design, including unity, emphasis, focal point, scale, proportion, balance and rhythm, line, shape, pattern and texture, illusion of space, illusion of motion and value. Each student will gain a greater awareness and understanding of the elements and principles of design, through reading and production and analysis of works in various media covering the major components of design.

ART 109 Motion Graphics 3:3:0:0

This course examines principles, tools, and techniques utilized in the design of motion graphics. Discussions focus on creating animated shapes, imagery, video, and text, all of which form the basis of motion graphics projects. Emphasis is also placed on creating dynamic and visually interesting moving pieces, including logo animations, kinetic typography and title sequences, through the use of Adobe After Effects. Students develop finished, rendered works capable of delivery on CD, DVD, Broadcast, and the World Wide Web. Although not necessary, knowledge of Adobe Photoshop may be beneficial to a student enrolling in this course.

ART 110 Drawing I 3:3:0:0

Provides instruction in the basic techniques of drawing. Problems related to design, structure, composition, and interpretation will be considered. Course content focuses on observing and recording the human form in addition to nature in general.

ART 111 Color Theory 3:3:0:0

This course will explore the additive and subtractive color theories and their practical applications across artistic disciplines. Color-aid papers, mixed media collage, pigment as well as digital media oral presentations will serve as the basic media used in this course. Some of the topics covered will be an in-depth study of the basic properties of color, the psychological and expressive qualities of color and the symbolic and cultural content of color. This is a studio art course that will be project based.

ART 112 Figure Drawing 3:3:0:0

Prerequisite(s): ART 110

Anyone interested in the field of fashion design must have an understanding of the figure and its relation to its environment, perhaps more than any other career in art. Through the intense work of drawing the figure, students develop an understanding of the human body in all its aspects—what the body is, what it is made of, how it moves, and how it exists in space. The student's abilities in drawing and seeing reach a more advanced skill level through this experience. By utilizing a live model whose pose begin as simple shapes and become more complex as the student's skill develops, the course begins with a series of gesture drawings and ends with extended poses. References to historical masters are presented.

ART 115 Painting I 3:3:0:0

Includes basic instruction in form, color, value, composition, and historical material. The media will include acrylic. Students are encouraged to create works driven by personal expression.

ART 118 2D Game and Simulation Graphics 3½:3:1½:0**Prerequisite(s):** ART 107**Corequisite(s):** CIS 118

This course teaches students techniques for creating two-dimensional, pixel-based and vector graphics to be used in interactive games and simulations. The course focuses on both static and animated sprites to be incorporated into games and simulations, as well as techniques for computer-assisted and scripted animation. Playable 2D games will be developed from inception to completion within Adobe Flash. This course is paired with CIS 118 - Game and Simulation Programming Fundamentals as a learning community.

ART 119 Digital Photography I 3:3:0:0

This course will serve as an exploration of the fundamental principles, techniques and application of digital-camera based image creation. Students will learn skills necessary to capture digital images by use of proper exposure settings for aperture, shutter speed, metering, color and light balance, composition, lighting, manual techniques, and editing. The course will include lecture, demonstration, assignments (in and out of the classroom), readings, critique, and critical issues in photography.

ART 120 Photography I 3:3:0:0

A course in the fundamentals of photography as an art form designed for those with no previous experience. Covering essentials of camera operation, film, and paint processing. Critiques of work will lead to an understanding of how we perceive the world, ourselves, and the photographic medium.

ART 125 Jewelry and Metalsmithing I 3:3:0:0

Acquaints students with basic jewelry and metalsmithing techniques. Special emphasis placed on a variety of methods of construction. Jewelry considered in a fine arts context in terms of form, color, and content. Assigned readings, studio projects, and weekly critiques will help students develop a better understanding of this area of concentration.

ART 128 Computer-Aided Logo and Advertising Design 3:3:0:0**Prerequisite(s):** ART 107

An introduction to the software being utilized in the current Computer-Generated Design Industries, the course focuses on the generation of vector-based graphical elements common in computer-generated logo designs and advertisements. The students will build their portfolios by utilizing Adobe Illustrator to design CG visuals for use in various projects, including, but not limited to, print and web advertisements, motion graphics, and multimedia enhanced designs.

ART 130 Ceramics I 3:3:0:0

Provides instruction that will enable the student to gain a progressive understanding of form and to develop skills in this craft. Beginning throwing and hand-building projects will include the use of stoneware and porcelain clay. Projects will include the creation of functional and non-functional ware.

ART 132 Principles of 3D Modeling and Texturing 3:3:0:0**Prerequisite(s):** ART 107

This course examines three-dimensional tools and techniques used to create photorealistic, illustrative, and abstract digital imagery. Students will learn the concepts behind polygonal modeling and texturing to create various computer-generated objects, including, but not limited to products, vehicles, organic shapes, and structures. Students develop finished, polished computer-generated imagery using industry-standard software and the exploration of modeling, texturing, lighting, and rendering.

ART 135 Three Dimensional Design 3:3:0:0

Considers the elements of design and the principles of three-dimensional design. Goals include helping the student to become aware of the use and development of design through the utilization of basic materials, technique, and tools. An understanding of the major traditions and contemporary movements in sculptural design will also be explored. Each student will gain a clearer understanding and greater appreciation of form through individual involvement in creative projects.

ART 145 The Art of Illustration 3:3:0:0

Students develop their unique "visual language" through projects dealing with areas in the illustration market. Students study illustrators, illustration as an art form, and trends in the field. Students gain an overview of the variety of options in the field and experience in producing illustrations in a variety of media and contexts from initial idea to finished product.

ART 150 Fashion Design Concepts And Illustration 3:3:0:0**Prerequisite(s):** ART 108 and ART 112

Students address fashion design concerns primarily through the use of two-dimensional exercises that are utilized in the fashion industry. Important topics that the course reviews include fashion illustrating, textile rendering textiles (flat design drawings), and collection development.

ART 152 Clothing Construction 3:3:0:0

Students develop professional skills and techniques required for the construction of apparel. Through the completion of a variety of projects, students acquire knowledge about selecting designs, fabrics, and expressive details as they relate to a professionally finished garment. Students are encouraged to make reference to historical fashion trends and materials.

ART 155 Fashion Draping 3:3:0:0

Introduces students to the professional dressform, which will be used to learn the basic draping techniques to create garments to fit the female body. Students will use precise measurements and drafting to prepare blocked muslin for draping. They will drape and fit the muslin to the dressform to create classic garments, including the two basic bodices, princess line garments, shifts, dresses, and skirts. Using a combination of classic French and current industry techniques and working on a classic scale dressform, students will drape, true in, baste, pin, and press each finished "muslin" for fittings on the dressform. Finally, students will exhibit their thorough understanding of the draping lessons by gathering a picture file that demonstrates the various projects presented during the semester.

ART 181 Advanced 3D Modeling and Texturing 3½:3:1½:0**Prerequisite(s):** ART 132

Building upon the foundational principles of 3D modeling and texturing to create more complex 3D models, including creatures and characters, this course discusses 3D sculpting and texture painting as means of augmenting traditional modeling and texturing methods. Topology and normal mapping are explored, with an emphasis on using efficient 3D models in game environments. Various 3D animation concepts are also discussed as a means to help bring these 3D models to life. Game projects using the visual assets created will be produced in partnership with programming students.

ART 205 Pattern Making I 3:3:0:0

Introduces students to the sloper, which will be used to create basic pattern shapes for each part of the human body. Students use mathematical processes to achieve perfect fit and proportions. Bodice, torso, pant, skirt, sleeves as well as clothing details are created in muslin and pattern paper.

ART 206 Pattern Making II 3:3:0:0**Prerequisite(s):** ART 205

Addresses more advanced techniques of pattern making and designing. Concepts such as draping techniques, specific sizing instruction of patterns, and emphasis on various textiles are emphasized. Students learn to create garments from the point of creating the pattern, selecting the fabric, to making the finished garment.

ART 209 Computer Game and Simulation Art Capstone 3:3:0:0**Prerequisite(s):** ART 118, ART 247, CIS 180**Corequisite(s):** ART 252

This is the capstone course for the Computer Gaming and Simulation Program Digital Arts track. In this course, students will utilize the skills that they have developed in previous courses to create three-dimensional game/simulation projects in a team-based environment. Students will participate in the design, production, and project management process while utilizing their digital arts skills to develop a computer game.

ART 210 Drawing II 3:3:0:0**Prerequisite(s):** ART 110 or equivalent

Expands on the basic concepts presented in Drawing I. Students will be introduced to more complex problems that focus on expressive development. Motivates students to a greater degree of personal involvement that requires more than prescribed results for problem solution.

ART 212 American Art 3:3:0:0**Prerequisite(s):** ART 101 or permission of instructor

An in-depth study of the art of our country commencing with the 17th century and concluding with the present. Emphasis on examples that can be viewed and studied locally.

ART 215 Painting II 3:3:0:0**Prerequisite(s):** ART 115 or equivalent

Further expands the foundation of the Painting I course to introduce a broad variety of technical approaches, format sizes, and subject matter and to show the many possibilities that exist in the painting medium. Students will enlarge their understanding of painting as a medium, explore various aspects of color theory, and study and integrate a variety of compositional devices to achieve stronger impact. Students will gain an understanding of the interrelationship between value and hue and how they are manipulated to achieve specific effects, and continue their self-expressive development.

ART 220 Photography II 3:3:0:0**Prerequisite(s):** ART 120 or equivalent

Builds on the fundamentals of photography as an art form presented in Photography I. The use of the camera, film, and print processing will be raised to a higher level. The critique will be an important part of each class.

ART 225 Jewelry and Metalsmithing II 3:3:0:0**Prerequisite(s):** ART 125 or equivalent

Builds on the techniques, concepts, and methods of construction presented in the first level of this craft. The elements of line, form, texture, and color will be redefined and pursued in greater depth. Emphasis is given to content and meaning. A review of the previous readings, studio projects, and critiques will be used to promote greater understanding. Assignments made on an individual basis. The processes includes inlay, repousse, forging, lamination, oxidation, enameling, centrifuge, setting, and fabrication. Personal expression and the development of excellence in craftsmanship are of paramount importance.

ART 226 Advanced Multimedia Topics and Design Concepts 3:3:0:0**Prerequisite(s):** ART 107 or ART 140

Students will utilize the tools presented in previous courses to develop an interactive, educational multimedia product. Students will work in teams to develop a computer-based instructional product for a real-world client.

ART 230 Ceramics II 3:3:0:0**Prerequisite(s):** ART 130 or equivalent

Follows the basic areas of exploration included in the Ceramics I course. Hand-building and wheel-thrown projects will be created. Emphasis is on improving the basic skills and learning to be more sensitive to form and shape.

ART 235 Sculpture 3:3:0:0**Prerequisite(s):** ART 135

Provides opportunities for students to gain a better understanding of the processes and concepts presented in ART 135, Three Dimensional Design. Students will be encouraged to develop systems working with armatures and using additive and subtractive methods. Introduces the various tools used to sculpt and emphasizes understanding the major traditions and contemporary movements in sculpture and design.

ART 242 Desktop Publishing 3:3:0:0**Prerequisite(s):** ART 107 and ART 128

This course immerses students in the theories and practice of desktop publishing using industry-standard software. Students will incorporate raster and vector artwork along with typography to produce professional layouts for newspapers, magazines, books, posters, brochures, and electronic media. This course will be used to produce portfolio work that students can use when seeking employment or admissions to four-year institutions.

ART 247 Introduction to Animation 3:3:0:0**Corequisite(s):** ART 132

This course examines the principles of animation in order to give students a basis for creating interesting, entertaining, and natural-looking movement. Students will learn foundational animation principles, taught through 2D animation techniques, and later reinforced using 3D computer animation concepts. In addition to using time-tested tools of traditional animation, students will utilize modern, advanced animation features of leading professional animation software, including Autodesk Maya.

ART 248 Web-Based Interactive Animation 3:3:0:0**Prerequisite(s):** CIS 141 or CIS 112

This course provides students with the knowledge and practical experience needed to create effective and efficient interactive animations and websites from concept to development using Adobe Flash. Instruction in vector, raster, and animated graphical elements as well as the scripting needed to make these elements interactive, will be emphasized. Students will build their portfolios by utilizing Adobe Flash to design vector-based, animated, interactive projects. Students will need prior programming or scripting experience to be successful in this course. Additionally, knowledge in raster image creation and manipulation via Adobe Photoshop, though not necessary, may be beneficial to students.

ART 251 Character Rigging and Animation 3:3:0:0**Prerequisite(s):** ART 247

In this course, students will develop character animations using the Autodesk Maya professional 3D animation software package. Emphasis is placed on developing effective skeletal structures, character rigging, and keyframe-driven animation, utilizing Inverse and Forward Kinematics. Students will learn how to create natural, believable motions through understanding and mimicking weight distribution and other natural forces, which act upon body motion. Bipedal, Quadrupedal, and other forms of animal locomotion will be explored. Though it is not necessary, taking ART 181 - Advanced 3D Modeling and Texturing may be beneficial for students taking this course.

ART 252 Computer Generated Dynamic Simulations 3:3:0:0**Prerequisite(s):** ART/CIS 132 or Instructor Permission

This course explores the creation of physics-based animations for use in the simulation, gaming, and entertainment industries, through the use of industry-standard computer animation and 3D gaming software. The principles, tools, and techniques used in creating

rigid-body dynamics, soft-body dynamics, particle physics, and other dynamic simulations will be discussed. Students will produce completed animations and interactive projects to strengthen their skills and their portfolios.

ART 258 Multimedia Practicum 3:3:0:0**Prerequisite(s):** Instructor approval required

This course serves as an optional program capstone for the Computer-Generated Digital Art and Animation degree. Students must submit a proposal for a project that they intend to complete for the duration of the course in order to be approved by the Practicum instructor. Students may also choose to seek an Internship to fulfill the practicum. Specific requirements of the project or the internship will be outlined, if a student is accepted into the course. The course is intended to allow students to produce completed, polished work for inclusion in a portfolio or demo reel, to gain real-world experience via an internship within the digital arts field, or to otherwise prepare for future employment. Regardless of whether the practicum is a project or internship, students will need to meet strict deadlines and produce appropriate work for those deadlines, in order to simulate real-worlds work experience. Since different projects and internship opportunities have different skill requirements, the instructor of the Practicum will determine students' eligibility on a case-by-case basis.

ART 260 Independent Study 1-3:1-3:0:0**Prerequisite(s):** Introductory course in the area and written consent of cooperating faculty member

Reading and/or experimentation for individual or group study on topics selected in consultation with faculty member. Special attention is given to the particular abilities and interests of students, with individual guidance for advanced studies. Students may choose research on selected problems, supervised field studies, or reading programs, among other alternatives.

ART 260U The History of Art from a Queer Perspective 3:3:0

A survey of the history of painting, sculpture, and other art forms from ancient times to the 1960s, through a series of chronological topics, with a focus on many works attributed to LGBTQ artists. This course also includes a basic presentation of terms used to describe and discuss art, best practices terms used to describe and discuss the LGBTQ community artists and writers, along with discussions of key developments, techniques, and inventions that shaped the formation of art movements. Attention will be paid to the theory of coordinative biography that maintains that competent study of historical figures' works cannot be separated from the circumstances of their lives, including their sexual orientation and gender identity.

Astronomy**AST 105 Introduction to Astronomy 3:3:0:0****Prerequisite(s):** ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

This course is designed for individuals who want to explore the universe around them. Topics of discussion will include Big Bang, scale and history of the universe, galaxies and planets, a thorough treatment of the solar system, structure of earth and sun.

AST 106 Introduction to Astronomy with Lab 4:3:3:0

Prerequisite(s): Successful completion of ENG 100 (or LCCC writing placement score of at least 57 and LCCC reading placement score of at least 94), and successful completion of MAT 090 (or LCCC Pre-Algebra placement score of at least 41 and Algebra score of at least 77).

Corequisite(s): AST 106L Introduction to Astronomy Lab
This course is designed for individuals who want to explore the universe around them. Topics of discussion will include Big Bang, scale and history of the universe, galaxies and planets, a thorough treatment of the solar system, structure of earth and sun.

Aviation**ASA 111 Private Pilot–Flight Theory (Airplane) 3:3:0:0**

Prerequisite(s): Student Pilot certificate, Second Class FAA medical (First Class highly recommended), U.S. citizen or TSA approval to initiate flight training

This course is designed to provide the appropriate knowledge, skills, and aeronautical decision-making tools in compliance with the Federal Aviation Administration (FAA) approved Part 141 training curriculum for the Private Pilot Certificate. Study of the following topics within the FAA-approved ground and flight syllabi include introductory aerodynamics, meteorology, federal regulations, air traffic control, national airspace system, navigation for Visual Flight Rules flight, use of single-pilot resource management tools, introduction to aircraft systems and aircraft performance. Upon successful completion of this course, the student will possess the knowledge to pass the FAA written exam for the Private pilot certificate, airplane single engine land.

ASA 112 Private Pilot Practical 2:1:1:75

Prerequisite(s): Possession of a student pilot certificate and a second class medical. U.S. citizenship or TSA approval is required. Students must meet with aviation program director prior to enrollment.

Corequisite(s): ASA 111

This course is designed to provide the practical flight training necessary to develop the aeronautical skill and experience necessary to meet the requirements for a private pilot certificate with an airplane category rating and single-engine land class rating. The training will be completed using an FAA approved Part 141 flight training curriculum. Students must attend flight practical class one hour per week during the semester to read, discuss and solve situations which arise during flight training and to receive safety and/or technical information. Students will attain the FAA Private Pilot Certificate at the completion of the course. Passing the Stage flight checks, end of course flight check, and the FAA flight practical are requirements for this course.

ASA 117 Aviation Meteorology 3:3:0:0

As a foundation, provides insight into meteorology and its effect on aviation operations. The course examines the structure of the atmosphere, weather patterns and their impact on flight operations to include thunderstorms, turbulence, wind shear, and icing. Sources of weather information and analysis of weather reports to facilitate flight planning will also be examined.

ASA 121 Instrument Flight Theory (Airplane) 3:3:0:0

Prerequisite(s): ASA 111, second class medical and U.S. citizenship or TSA approval to initiate flight training

This course is designed to provide the appropriate knowledge, skills, and aeronautical decision-making tools in compliance with the Federal Aviation Administration (FAA) approved Part 141 training curriculum for the Instrument Airplane rating. Study of the following topics within the FAA-approved ground and flight syllabi include human factors; flight instruments; attitude instrument flying; instrument regulations; air traffic control system; departure, enroute, arrival, holding and approach procedures; weather information; cross-country planning and single-pilot resource management tools.

Upon successful completion of this course, the student will possess the aeronautical knowledge to pass the FAA written exam for the Instrument Airplane rating.

ASA 122 Instrument Airplane Practical 2:1:1:75

Prerequisite(s): Possession of the Private pilot certificate and a second class medical. U.S. citizenship or TSA approval is required.

Corequisite(s): ASA 121

This course is designed to provide the practical flight training required for the completion of the Instrument Rating utilizing an FAA Part 141 training curriculum. Additional hours are available in LCCC's flight training device. There are three Stage checks and an end of course stage check as part of the course curriculum. Students must attend flight practical class one hour per week during the semester to discuss and resolve situations that arise during flight training and to receive safety and/or technical information. Students are to attain the FAA Instrument Rating at the completion of the course. Passing the Stage flight checks, end of course flight check, and the FAA flight practical are requirements for this course.

ASA 125 Aircraft Engines and Structures Theory 3:3:0:0

Provides a foundation for both pilots and mechanics in the elements of reciprocating and turbine (gas generating) aircraft engines, engine systems, operating procedures, performance diagnosis, engine structure and materials.

ASA 126 Crew Resource Management**3:3:0:0**

Prerequisite(s): Private Pilot Certificate or course instructor approval

The Crew Resource Management (CRM) course is a study of the attitudes and skill sets that enable flight crews to effectively manage the complex flight environment. Teamwork, communication, leadership, situation awareness, workload and automation management, controlled flight into terrain awareness, and decision-making are among those vital skills to enhance the safety and effectiveness of a technically competent pilot crew. The evolution of CRM and the integration of CRM into flight crew training as well as the safety culture of an airline are examined. The proven effectiveness of CRM for managing threats and errors are viewed through the lens of the Line Operations Safety Audit. Consideration is given to the impact of diverse international cultures on the effectiveness of CRM.

ASA 127 Aircraft Systems**3:3:0:0**

This course provides a detailed study of aircraft systems. Large/advanced aircraft systems study of electrical, hydraulic, pressurization, pneumatics, propellers, environmental, de-ice/anti-ice, power sources and normal/emergency operations.

ASA 211 Commercial Flight Theory (Airplane)**3:3:0:0**

Prerequisite(s): Possession of the Private pilot certificate airplane single engine land with Instrument airplane rating. Second class FAA medical certificate.

Corequisite(s): ASA 212

This course is designed to provide the appropriate knowledge, skills, and aeronautical decision-making tools in compliance with the Federal Aviation Administration (FAA) approved Part 141 training curriculum for the Commercial pilot certificate. Study of the following topics within the FAA-approved ground and flight syllabi include knowledge of airports; airspace, flight information; meteorology; airplane performance; VFR cross country flight planning and navigation; aviation physiology; high performance powerplants; environmental and ice control systems; complex aircraft transition; advanced aerodynamics; predicting performance, controlling weight and balance; maximum performance takeoffs and landings, commercial flight maneuvers; emergency procedures and single pilot resource management for commercial pilot operations. Upon successful completion of this course, the student will possess the aeronautical knowledge to pass the FAA written exam for the Commercial pilot certificate.

ASA 212 Commercial Pilot Airplane I 2:1:1:4

Prerequisite(s): Private pilot certificate airplane single engine land with instrument airplane rating. Student must have an FAA Second Class Medical.

Corequisite(s): ASA 211

This course is designed to provide the practical flight training required toward the completion of the Commercial pilot certificate utilizing an FAA-approved Part 141 training curriculum. During the Commercial pilot flight training the student increases proficiency in VFR cross-country procedures by planning and performing extended cross-country flight operations. The student also increases proficiency in performing night flight operations. Two hours of ground instruction in LCCC's flight training device is also a course requirement. Students must attend flight practical class one hour per week during the semester to discuss and resolve situations which arise during flight training and to receive safety and/or technical information.

ASA 214 Commercial Pilot Airplane II 2:1:75:84

Prerequisite(s): ASA 212, Possession of the Private Pilot Certificate Airplane Single-Engine Land with Instrument Airplane Rating. Second Class FAA Medical.

Corequisite(s): ASA 221 Multi-Engine Flight Theory

This course is designed to complete the practical flight training required for the successful attainment of the Commercial Pilot certificate, airplane single engine and multiengine land class rating, utilizing an FAA approved Part 141 training curriculum. The student gains proficiency in operating a complex aircraft and includes learning the procedures to operate complex airplane systems, and manage engine and equipment malfunctions and failures. The student performs maneuvers and procedures to attain the proficiency level required for a single and multiengine commercial pilot with an instrument rating.

ASA 215 Aerodynamics**3:3:0:0**

Prerequisite(s): MAT 130

This course introduces the student to the dynamics of flight through investigation of airfoils and shapes as they relate to aircraft structures and their interaction with the atmosphere during flight. Analysis of the physics of flight, coefficient of lift, relationship of lift/drag, aerodynamic devices, interaction of airframe/airfoils with the atmosphere during flight, low/high speed aerodynamics, mach effects, area rule, wing sweep are discussed. Aircraft performance based on powerplant type and special flight conditions experienced by commercial pilots is evaluated.

ASA 217 Aviation Laws and Regulations**3:3:0:0**

Prerequisite(s): ASA 111

Designed to provide insight pertinent to federal governing bodies. Current local, federal, and international laws that form the present structure of aviation law are also studied.

ASA 219 Air Carrier Operations 1:1:0:0

Prerequisite(s): ASA 211 or permission of instructor

Consists of a one hour per week lecture/discussion class period. Students will review and discuss in detail the areas of the Federal Aviation Regulations appropriate to Part 135 Air Carriers. Subject material of this course is intended to familiarize the entry-level commercial pilot with the regulatory requirements of Air/Taxi Charter and Scheduled Air Carriers under Part 1. References to large aircraft operations under Part 121 of the Federal Aviation Regulations will be introduced as appropriate.

ASA 221 Multiengine Flight Theory 1:1:0:0

Prerequisite(s): Private pilot certificate with an instrument airplane rating, a second class medical. U.S. citizenship or TSA approval.

Corequisite(s): ASA 223 or ASA 214

This course is designed to provide the appropriate knowledge and aeronautical decision making tools in compliance with the Federal Aviation Administration (FAA) approved Part 141 training curriculum needed to obtain a multi-engine land class rating. The multi-engine rating will be earned as part of the Commercial pilot flight training curriculum, specifically the requirement for complex aircraft training. During the training, the student will become familiar with the multi-engine airplane and the human factors concepts and issues relating to multi-engine operations. The student will learn airplane systems and aerodynamics and how to accurately compute and control the weight and balance for a multi-engine airplane. The student will learn the principles, techniques, and procedures associated with engine out aerodynamics and engine out operations for the multi-engine airplane. The student will learn procedures and maneuvers that apply to instrument flight in the multi-engine airplane during normal and engine out operations. Upon successful completion of this course, the student will possess the aeronautical knowledge to pass the FAA practical oral exam for the issuance of a multi-engine land class rating.

ASA 223 Multiengine Flight Practical (Airplane) 2:1:75

Prerequisite(s): Students must meet with the Instructor of Aviation Programs prior to enrollment. Possession of the Commercial pilot certificate (ASEL), Instrument Airplane rating and a second class medical. U.S. citizenship or TSA approval.

Corequisite(s): ASA 221

This course is designed to provide the appropriate aeronautical skill and decision-making tools in compliance with the Federal Aviation Administration (FAA) approved Part 141 training curriculum for the addition of a multi-engine land class rating to the existing Commercial pilot certificate. During stage one of the training, the student will become familiar with the multiengine airplane, the training program and the human factors concepts and issues relating to multiengine operations. The student will learn airplane systems and aerodynamics and how to accurately compute and control the weight and balance for multi-engine airplane. The student will be able to analyze multi-engine performance and compute accurate values from multi-engine performance data. In the second stage of the course, the student will acquire the aeronautical knowledge necessary for multi-engine VFR operations. The student will learn the principles, techniques, and procedures associated with engine out aerodynamics and engine out operations for the multi-engine airplane. In stage three of training, the student will demonstrate knowledge of basic instrument procedures and acquire the knowledge required to plan safe flight operations (under IFR in the multi-engine airplane). The student will learn procedures and maneuvers that apply to instrument flight in the multi-engine airplane during normal and engine out operations. Instruction in a flight training device is also available. Upon successful completion of this course, the student will possess the aeronautical skill and knowledge to pass the FAA practical and oral exam for the addition of an airplane multi-engine land class rating to the existing Commercial pilot certificate.

ASA 226 Aviation Safety 3:3:0:0

Prerequisite(s): ASA 126 Crew Resource Management

This course examines the role of various regulators and operators concerning contemporary safety issues directly affecting aviation operations. Primary focus is on the application of Single-pilot Resource Management and aeronautical decision-making tools with the review of aviation related accidents to identify accident causal relationships in an effort to reduce future aviation accidents. Related topics include: various safety developments in the air and on the ground, aviation security, and aviation safety management programs.

ASA 227 Physiology/Psychology of Flight 3:3:0:0

Prerequisite(s): Private pilot certificate

A study of the physical and psychological factors of significance to pilots. This includes the causes, symptoms, and emergency treatment of ailments common to the flight environment through a basic understanding of the human being's normal body functions. Hypoxia, hyperventilation, decompression sickness, body heat balance, respiration, circulation, spatial disorientation, vision, and hearing are examined.

ASA 230 Flight Instructor Theory (Airplane) 3:3:0:0

Prerequisite(s): Airplane Commercial Pilot Certificate with instrument airplane rating, Second class FAA medical, ASA 211, ASA 212.

This course is designed to provide the appropriate knowledge, skills, and aeronautical decision-making tools in compliance with the Federal Aviation Administration (FAA) approved Part 141 training curriculum for the Certified Flight Instructor certificate. During stage one of the course the student will become familiar with learning theories, styles, and domains of learning, and communications techniques. The student will learn about the teaching process, teaching methods lesson plans, evaluation of student performance, and human factors. In the second stage of the course the student will begin to apply the principles of planning and organizing ground and flight training lessons. The student will acquire practical experience by conducting practice ground training lessons. The student will obtain the instructional knowledge required to teach Private and Commercial pilot students, including the recognition, analysis, and correction of common student errors. Upon successful completion of this course, the student will possess the aeronautical knowledge to pass the FAA written exams for the Certified Flight Instructor certificate.

ASA 231 Certified Flight Instructor (ASEL) 2:1:0:75

Prerequisite(s): Commercial pilot certificate with instrument rating or ATP Certificate FAA Class II (or I) Medical. Summer enrollment only-ASA 230.

Corequisite(s): ASA 230

The student will learn the analysis and performance of all the maneuvers required for the private and commercial pilot certification from the right seat of the training airplane. The student will practice appropriate maneuvers and procedures using visual and instrument references, as indicated in the lesson content. Throughout the course, the applicant will use proper Single-pilot Resource Management techniques and display effective aeronautical decision making. This course is designed to provide the practical flight training required for the completion of the Flight Instructor certificate utilizing an approved FAA Part 141 training curriculum. Passing the flight Stage checks and the FAA flight practical check are requirements for this course.

Biological Sciences**BIO 101 Introductory Biology 4:3:3:0**

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Emphasizes the unifying themes of biological science—ecology, evolution, and genetics—suitable for non-science majors. No prior background in science is required, although it could be helpful. Laboratory work stresses the hands-on study of living organisms wherever possible, including field work around the campus pond. Animal dissection is not required.

BIO 105 Fundamentals of Biology 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

This course explores fundamental concepts of biochemistry, animal cell biology, and genetics. It is designed to prepare students for higher level biology courses, particularly Anatomy and Physiology I and Microbiology.

BIO 106 Plant Science 4:3:3:0

Introductory lecture/lab course emphasizing the biology of plants. This course is designed for students interested in a career in the plant sciences or who desire a general knowledge of the morphology, anatomy, and physiology of plants and is suitable for both science and non-science majors. The lecture component emphasizes the effects of environment on growth, development, physiology, and reproduction of plants, as well as unifying themes in biological sciences such as ecology, evolution, and diversity. The laboratory component stresses hands-on study of plant cells, tissues, organs, and whole plants.

BIO 110 General Biology I 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

This is the first of a two-part course covering selected topics within the three major areas of modern biology: molecular, organismic, and environmental biology. General Biology I will focus on biological chemistry, the central principles of structure and function of the cell, metabolism, genetics, and ecology. It will also include selected tools used by biologists, such as the use of the microscope, chromatography, and electrophoresis. Detailed lab coverage accompanies the lecture portion of this course.

BIO 111 General Biology II 4:3:3:0

Prerequisite(s): BIO 110 or permission of instructor

This sequel to BIO 110 assumes General Biology I coverage upon entry to class and completes the in-depth, two-part course in modern biology. Topics include evolution, cellular metabolism, plant and animal taxonomy, and biology. Considerable dissection across several phyla may be required.

BIO 112 Introduction to Biotechnology 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Will cover the scientific basis of the technologies used by biotechnology industries and their historical development with an emphasis on current applications in the areas of agriculture, medicine, forensics, the environment, and the chemical industry. Students will be introduced to the basics of recombinant DNA technology, cell culture, protein expression and purification, stem cell research, bio-terrorism related issues, vaccines, and bioethics. Topics will also include an overview of biopharmaceutical and biotechnology industries.

BIO 115 Field Biology 4:3:3:0

A field course providing students the opportunity to enrich their science background and develop a knowledge and appreciation for the natural environment. Lecture and lab will be held in the field and classroom. ("Field course" implies extensive outdoor work.)

BIO 116 Topics in Ecology 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94

This is an introductory course for both science and non-science majors who wish to develop an appreciation and understanding of the interactions between living things and their environment. Besides bacteria and viruses, humans are unquestionably the most powerful ecological agent that exists on earth. As such, their specific role(s) in determining the nature and outcomes of these interactions is of particular interest in this course.

BIO 117 World Biomes 4:3:3:0

Through direct travel involvement worldwide, students will gain understanding, appreciation, and respect for life, the dynamic nature of living processes, and the various ecosystems in which these processes occur. Students will be in a better position to understand where things can go wrong, where they have already gone wrong, and how they, as responsible citizens of an ecologically united world, can prevent further disturbance.

BIO 118 Woody Plants in the Landscape 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94

A survey of woody plant species emphasizing identification, ecological and aesthetic value, and culture of as many as 170 species including trees, shrubs, and vines. Ecological interactions such as plant diseases, susceptibility to insect pests, and invasiveness will be emphasized. Lab requires weekly walks around and near campus to study woody specimens, or may occasionally require class meetings at off-campus sites.

BIO 120 Biology of Aging 3:3:0:0

This non-lab course will explore biological aspects of human aging. It is appropriate for students with minimal background in science, but who will be working in some capacity with the elderly.

BIO 122 Biotechnology Techniques 4:3:3:0

Prerequisite(s): BIO 110, CHE 111

Will cover concepts and techniques necessary to work effectively in a biotechnology research or manufacturing laboratory. The importance of quality regulations and standards and the role of the technician in producing quality results will be emphasized. Students will gain theoretical and practical knowledge of laboratory instruments as well as basic laboratory techniques. Topics will include maintenance, record keeping, cleaning and calibration of laboratory equipment, preparation of common solutions and reagents, and writing and following procedures. Computer software will be used to generate spreadsheets and data analysis. Applications of bioseparations, cell culture, and fermentation will be introduced. Students will be trained in laboratory safety policies and good laboratory practice (GLP).

BIO 124 Nutrition 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Examines and analyzes the body's needs for vitamins, minerals, and chemicals necessary for healthy functioning, as well as the role of nutrition in the development of disease. Diet and menu analysis will comprise an important component of this course. This course is useful for healthcare workers, food service personnel, or individuals interested in their own nutrition.

BIO 125 Herbs and Herbal Medicine 3:3:0:0

Students will learn about the history and philosophy of herbal medicine, including medicinal systems such as Ayurveda, Chinese, Unani, Siddha, and Homeopathy. Special emphasis will be placed on the pharmacological and therapeutic aspects as well as common terminology, effectiveness, safety, and government regulation of herbs.

BIO 130 Cataclysm: The Science of Natural Disasters 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

This course is a survey of Earth's processes that have direct, sudden and violent impacts on the environment. This non-science major, non-lab course is designed for students that desire a basic understanding of natural potentially catastrophic processes such as earthquakes, volcanoes, tsunamis, floods, landslides, severe weather, wildfires, and coastal processes. Each of the studied natural processes potentially provides opportunities for biotic distribution, speciation or extinction. How societal decisions and subsequent vulnerabilities can transform natural occurrences into hazards, disasters and catastrophes, will be addressed.

BIO 135 Introduction to Environmental Science 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Introduction to Environmental Science will demonstrate how natural systems function and how humans influence these systems. Topics will include, but will not be limited to; environmental policy and ethics, human population growth, land use and development, environmental toxicology, freshwater and marine resources, processes and pollution, bioremediation, atmospheric processes, the use of conventional fossil fuels, and the development of alternative energy resources and renewable energy alternatives. This course is designed for non-science major students that desire a basic understanding of the science behind both environmental problems and solutions, and potential science majors who are considering Environmental Science as a major.

BIO 137 Introduction to Environmental Science 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Corequisite(s): BIO 137L Introduction to Environmental Science Lab

Introduction to Environmental Science will demonstrate how natural systems function and how humans influence these systems. Topics will include, but will not be limited to; environmental policy and ethics, human population growth, land use and development, environmental toxicology, freshwater and marine resources, processes and pollution, bioremediation, atmospheric processes, the use of conventional fossil fuels, and the development of alternative energy resources and renewable energy

alternatives. This course is designed for non-science major students that desire a basic understanding of the science behind both environmental problems and solutions, and potential science majors who are considering Environmental Science as a major.

BIO 163 Anatomy and Physiology I 4:3:3:0
Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77. Biology assessment test required. It is strongly suggested that students not passing the assessment test take (and pass with a C or better) BIO 105 or have passed a college-level biology course.

Provides students, primarily in health-related programs, with an in-depth understanding of the anatomy and physiology of complex living organisms, including humans. Biological principles, as well as the structural and functional relationships among several organ systems, are discussed. (Considerable dissection is required.)

BIO 164 Anatomy and Physiology II 4:3:3:0

Prerequisite(s): BIO 163

BIO 164 is the second course in a two-course series designed to examine the interrelationships between anatomy and physiology in complex organisms, primarily human beings. It is aimed predominantly at students pursuing health-related programs. The course covers the following systems: cardiovascular, lymphatic, endocrine, respiratory, digestive, urinary, and reproductive, as well as nutrition and metabolism, and fluid and electrolyte balance. Detailed laboratory coverage accompanies the lecture portion of this course.

BIO 205 Principles of Botany 4:3:3:0

Prerequisite(s): BIO 110

Integrated study of the anatomy, growth, metabolism, adaptations, and interactions of seed plants. Emphasis is placed on their relationship with the environment.

BIO 206 A Survey of the Plant Kingdom 4:3:3:0

A study of major groups of organisms traditionally included in botany courses, including not only true members of the Plant Kingdom, but also various algae and protists, fungi, prokaryotes, and viruses.

BIO 208 Plant Propagation 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Study of the biology and techniques of both vegetative and sexual plant propagation. Labs emphasize experimentation and practical experience with seed germination, seedling culture, and vegetative propagation methods, including an independent research project.

BIO 212 Industrial Biotechnology 3:3:0:0

Prerequisite(s): BIO 112, 122

Students will be introduced to the bio-manufacturing process, including a survey of proteins and vaccines that are currently produced by biotechnology and pharmaceutical companies. Regulatory environment of

the biotechnology industry, including standard operating procedures (SOPs) and current good manufacturing practices (cGMP), will be discussed. Cell culture scale-up, high-throughput screening, and use of robotic equipment will be introduced.

BIO 214 Genetics 3:3:0:0

Prerequisite(s): BIO 110 or permission of instructor

Study of the principles and mechanics of heredity, including Mendelian and non-Mendelian inheritance, molecular structure and properties of genetic material, gene expression, genetic analysis of populations and genetic technologies. This is a non-lab course.

BIO 218 Honors Genetics 4:3:3:0

Prerequisite(s): BIO 110 or permission of instructor; GPA 3.0 or higher, or permission of instructor

Study of the principles and mechanics of heredity, including Mendelian and non-Mendelian inheritance, molecular structure and properties of genetic material, gene expression, genetic analysis of populations, and genetic technologies. Lab includes independent research.

BIO 220 Introduction to Microbiology 4:3:3:0

Prerequisite(s): BIO 105 or BIO 110 or BIO 163 or VET 101, or permission of the instructor

A general study of pathogenic and nonpathogenic microscopic life forms commonly encountered in biological work, especially in the medical fields. Emphasis is placed on structure and function of the organism in relation to the disease process. Laboratory studies include methods of culturing and identifying representative forms.

BIO 222 Molecular Biotechnology 4:3:3:0

Prerequisite(s): BIO 212, 220

A survey of principles of biotechnological applications of molecular and cell biology. Topics include transcription, translation, cell cycle regulation, protein expression, prokaryotic and eukaryotic gene expression, and antibodies. The laboratory will give the students exposure to recombinant DNA technology, such as cloning techniques, restriction digests, plasmid design and purification, electrophoresis, protein expression and purification, and immunoassays.

BIO 223 Biotechnology Seminar 2:2:0:0

Prerequisite(s): ENG 111, BIO 122

A survey (in seminar format) of current advances in biotechnology, bioinformatics, and the societal implications of biotechnological developments. Students will develop the presentation and discussion skills necessary for a biotechnology career by giving oral presentations on these topics and participating in instructor-facilitated group discussions. The importance of using current journals, scientific meetings, and the Internet to stay current in biotechnological topics will be emphasized.

BIO 231 Entomology 4:3:3:0

Prerequisite(s): BIO 101 or BIO 110

A general study of insect diversity, classification, anatomy and physiology, and ecology. Special emphasis on the harmful and beneficial activities of insects and on methods of controlling insect populations. Class will require some outdoor study (both during class and independently), including preparation of an insect collection. May occasionally require class meetings at off-campus sites.

BIO 236 Soil Science 4:3:3:0**Prerequisite(s):** BIO 110 and CHE 111

Discussion and examination of the physical, chemical, and biological characteristics of soil, including soil formation, fertility, pH, texture, and water-holding capacity. Soil profiles, erosion, organic matter, soil organisms, and plant nutrition will also be studied.

BIO 250 Selected Topics in the Natural Sciences 1:1:0:0**Prerequisite(s):** BIO 110 and CHE 111, or permission of instructor

An interdisciplinary science course designed to introduce students to various topics within the natural sciences. Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme. Their transcripts will list the second enrollment as BIO/CHE/PHY 251.

BIO 251 Selected Topics in the Natural Sciences 1:1:0:0**Prerequisite(s):** BIO/CHE/PHY 250

An interdisciplinary science course designed to introduce students to various topics within the natural sciences. Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme. Their transcripts will list the second enrollment as BIO/CHE/PHY 251.

BIO 270 Pathophysiology 3:3:0:0**Prerequisite(s):** BIO 163, 164

In-depth study of disease processes of the human body. It will take the format of etiology, diagnosis, and treatment of representative diseases from several body systems.

Business**BUS 109 Business as a Major 1:1:0:0**

This course is designed as an overview of the components of business. This course will introduce students to various careers in business as accounting, management, marketing and entrepreneurship. In addition, students will be introduced to various resources available to them as business majors, along with learning valuable study skills for business courses.

BUS 120 Introduction to Business Organization 3:3:0:0

The nature of business in regard to structure, principal activities, and problems are explained. Among the principal topics considered are the framework of

business; business operations; staffing and labor law; management; finance and accounting; competition; research; taxation; trade and globalization; economic indicators; and legal, governmental and regulatory issues. A business plan project will be explored.

BUS 130 Personal Money Management 3:3:0:0

Topics include budgeting, investments, estates, insurance selection, home buying, renting, consumer purchasing, social security benefits, retirement, and other subjects related to personal money management.

BUS 141 Principles of Advertising 3:3:0:0

Principles, practices, and problems of advertising, including evaluation of the techniques used in its management and control, are taught. Social and economic aspects are also considered.

BUS 150 Business Statistics 3½:3:1½:0**Prerequisite(s):** LCCC Algebra Placement Testing score of 77 or MAT 090 or MAT 100.

A one-semester treatment of applied statistics using the computer, specifically designed for students in business-related programs. Focuses on what statistical methods are available, which to use in a variety of business situations, and the most compelling methods of reporting the results. In lab, students will be presented with real data, cases, and projects from a variety of practical business applications. Credit will not be given toward graduation requirements for both BUS 150 and MAT 150.

BUS 152 Principles of Sales 3:3:0:0

This course familiarizes the student with basic principles of career selling. It reviews the salesperson's function in society, presents the characteristics and opportunities of a sales career, surveys required knowledge and skills for selling, presents details associated with the sales process, and provides suggestions for improving sales effectiveness. Emphasis is placed upon classroom student sales presentations and case studies.

BUS 209 Business Communications 3:3:0:0**Prerequisite(s):** LCCC English Placement Testing score of 57 or ENG 105

Fundamental principles of clarity, courtesy, and construction are applied to creating/writing effective electronic- and paper-based business messages such as phone calls, emails, memos, letters, reports, and presentations for American and global business communication. These principles are applied first to sentences and paragraphs and then to creating/writing complete business messages. Preparing and making electronic and other types of presentations will be studied and practiced.

BUS 211 Principles of Management 3:3:0:0

This course is a general introductory study of the management of business and nonbusiness entities. It presents management as process of organization and coordination to achieved objectives as well as the necessity for leadership as a guiding principle. An introduction to management and the associated social responsibilities is followed by additional topics including: managerial decision making, critical thinking; team building and group dynamics; organizational structure, globalization, organizational culture; change theory; entrepreneurship;

and organizational controls.

BUS 221 Principles of Marketing 3:3:0:0

A study of the organizational function of processes and procedures for the creation, communication, and distribution of goods and services and the management of customer relationships as it creates value and benefit to the organization and its stakeholders. Consumer behavior and all elements of the marketing mix (produce, place, price and promotion) will be analyzed.

BUS 237 Investments 3:3:0:0

Serves investors or would-be investors who are or will be actively developing and monitoring their own investment portfolios. Describes techniques, vehicles (stocks, bonds, mutual funds, real estate, tax shelters, annuities, limited partnerships, options, commodities, and other tangible investments) and strategies for implementing investment goals in light of risk-return trade-offs.

BUS 241 Business Law I 3:3:0:0

This course introduces the student to the legal environment governing the operations of modern business including the areas of contract law, tort law, negligence, criminal law, constitutional law and court, intellectual property law, product liability, employment law, and ethics and social responsibility.

BUS 242 Business Law II 3:3:0:0

Prerequisite(s): BUS 241

Explores the legal principles governing agency, employment, commercial paper, personal property, sales, bailments, real property, creditor's rights, and secured transactions.

BUS 246 Business Ethics 3:3:0:0

This course introduces students to the concept of ethics, the reasoned study of what is morally right and wrong, good and bad; it will give students an introduction to the fundamental issues associated with ethical behavior in business. Ethical theory will be studied. The theory will be applied to case problems so that students will learn to think critically about real-world dilemmas that they encounter in business settings.

BUS 248 Essentials of Entrepreneurship and Small Business Management 3:3:0:0

Entrepreneur: One who creates a new business in the face of risk and uncertainty for the purpose of achieving profit and growth by identifying significant opportunities and assembling the necessary resources to capitalize on them. This course will explore the creative and innovative thought process used by entrepreneurs.

BUS 252 Human Resources Management 3:3:0:0

Introduction to the responsibilities and work of a modern personnel administrator. Topics covered include industrial relations, employment planning, recruitment, selection, training, evaluation and promotion, remuneration, career and organizational development, minority employment, health and safety, and related law.

BUS 254 Human Resource Law 3:3:0:0

Prerequisite(s): BUS 241

Corequisite(s): BUS 252

Designed to prepare students in the area of employment law. Focus will be on issues faced by human resource administrators in a diverse workforce. The strategic importance of fairness and legal compliance will also be emphasized. The student will be made aware of the influence of governmental regulation as it pertains to recruitment, hiring, evaluating, and dismissal.

BUS 256 International Business 3:3:0:0

Prerequisite(s): ECO 201

An introduction to the basic concepts involved in international business. It presents an overview of the means of conducting international business with emphasis on what makes international different from domestic. Among the topics considered are the effects of the social systems within the countries on the conduct of international business, the dynamic interface between countries and companies attempting to conduct foreign business activities, the financial exchange systems, institutions that measure and facilitate international transactions, the major theories explaining international business transactions, and the institutions influencing those activities.

BUS 257 HRIS/Payroll Administration 3:3:0:0

Prerequisite(s): ACC 160, CIS 105

Corequisite(s): BUS 252

An overview of all functional areas in a Human Resources Information System. Students will learn how each area of an HRIS system interrelates with the other and how crucial proper design and management is to the success of the system. Students will analyze current HRIS software packages.

BUS 258 Labor Relations 3:3:0:0

Prerequisite(s): BUS 252

A study of the interrelationships between management's human resource policies and practices and the philosophies and practices of unionism. Exercises will focus on management and union relations as well as bargaining and the impact of external forces such as government and public attitudes. Discussions will also cover past, present, and future trends and issues of unionism.

BUS 259 Compensation and Benefits Management 3:3:0:0

Prerequisite(s): BUS 252 or permission of instructor

A study of the principles and systems of compensation programs, including employee benefits and incentive awards. Focus will be on compensation/benefit program planning, design, development and implementation; employee communications; and the various internal and external factors impacting compensation and benefits programs.

BUS 262 Recruiting, Training, and Evaluating Employees 3:3:0:0

Prerequisite(s): BUS 252

Deals with the principles of effective recruiting and hiring practices. Topics include recruiting, interviewing and hiring efficiently with an awareness of cost containment and compliance with current employment regulations. The concept of measuring job performance is examined as well as how to use these measurements to determine employee training and development needs.

BUS 284 Business Internship 4-6:1:0:225-375

Prerequisite(s): ACC 161; BUS 120 or 248; BUS 209, 211, 221; CIS 105; minimum GPA of 2.0; and permission of instructor

Provides students in various areas of business with hands-on experience. The student will work a total of 300 hours for four credits (each additional credit equates to 75 hours work). Students may also be required to attend campus meetings or seminars, complete projects, maintain journals, or do other assigned tasks as instructed. The internship must be pre-approved by the faculty member who will evaluate the internship experience according to deadlines established in the Business Internship Packet.

BUS 285 Global Business Practice Firm 4:4:0:0

Prerequisite(s): ACC 161; BUS 120 or 248; BUS 209, 211, 221; CIS 105; or permission of instructor

Using a global business model, students work as team members in a simulated business firm in a technologically current facility. Students will perform various business functions, such as accounting/finance, marketing, human resources, computerized information processing, and electronic commerce as the firm enters into virtual financial transactions with other simulated companies in the United States and other countries. Students are involved in decision making, critical thinking, problem solving, and activities.

Chemistry

CHE 105 Fundamentals of Chemistry 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

For the non-science major. Applies the principles of chemistry to consumer, environmental, and societal issues using both mathematical and non-mathematical problem solving. Will not satisfy the prerequisite for General Chemistry.

CHE 106 Physiological Chemistry 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Intended for students in various programs, such as Nursing, Veterinary Technician, or other healthcare, who require a background in the areas of General, Organic, and Biochemistry. The metric system, states of matter, acids and bases, atomic structure, structure and reactions of organic functional groups, classes of biochemicals, and the application of these to anabolism and catabolism comprise the course.

CHE 107 Chemical and Laboratory Safety 2:2:0:0

Prerequisite(s): CHE 111 or CHE 105 or CHE 106 or CHE 108 or any college-level chemistry course that includes at least 30 hours of hands-on chemistry laboratory and ENG 100 or LCCC English Placement Testing 57 and LCCC Reading Placement Testing 94.

Corequisite(s): MAT 105 or higher

Chemical and Laboratory Safety provides a fundamental understanding of the safety topics typically of concern in an industrial or research chemical laboratory. The

material is appropriate for anyone who may work in an environment where chemicals are used. This course is required in the Chemical Technology program.

NOTE: CPR/First Aid certification is a major component of this course. For those students taking the course on campus, on-line or through a hybrid format, the student has to provide current certification for CPR/First Aid to the instructor at the beginning of the semester. If the student can not provide current certification or is not certified, the student must come to campus at a scheduled time to complete the certification portion.

CHE 108 Essentials of Chemistry 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94.

Corequisite(s): MAT 105 or higher

This course is an intensive review of the fundamentals of chemistry with particular emphasis on solving chemical problems. The course is designed to prepare students with weak backgrounds for General Chemistry I.

CHE 111 General Chemistry I 4:3:3:0

Prerequisite(s): Successful score on Chemistry Assessment Examination or completion of CHE 108 with a grade of "C" or better.

Corequisite(s): MAT 160 or higher

For science and engineering students. Stresses nomenclature, properties, atomic and molecular structure, bonding, reactions and stoichiometry, thermochemistry of elements and compounds; gases, liquids, and solids.

CHE 112 General Chemistry II 4:3:3:0

Prerequisite(s): CHE 111, MAT 160 or higher

This course, intended for science majors, is a continuation of General Chemistry I. It emphasizes solutions, kinetics, gaseous and solution equilibrium, acid/base and solubility equilibria, thermodynamics, electrochemistry, RedOx equations, and nuclear chemical reactions.

CHE 205 Organic Chemistry I 4:3:3:0

Prerequisite(s): CHE 112

Study of carbon compounds with emphasis on structure, nomenclature, conformation, stereochemistry, synthetic methods, and spectroscopy. Chemical reaction mechanisms are stressed throughout. Course is an integrated treatment of aliphatic and aromatic chemistry. Laboratory work emphasizes separation, purification, kinetic studies, and identification of organic compounds stressing instrumental techniques (GC, IR, UV, NMR). Microscale technique is used in the laboratory.

CHE 206 Organic Chemistry II 4:3:3:0

Prerequisite(s): CHE 205

Continuation of CHE 205 with emphasis on mechanism, synthesis, and organic molecules of biological interest. Synthesis, chemical literature, and the elucidation of organic reaction mechanisms are explored in the laboratory. The laboratory uses microscale techniques.

CHE 209 Polymer Chemistry 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94.

Corequisite(s): CHE 206

This lecture and discussion course is appropriate for any science major and required for the chemical technology program. It focuses on showing examples of the interdisciplinary nature of science through the broadly useful field of macromolecules. Topics from chemistry, physics, engineering, and mathematics are brought together in the course. An understanding of polymer nomenclature, structure, synthesis, production, analysis, characterization, and reactions is developed. Examples emphasize commercial polymer technology throughout the course.

CHE 211 Instrumental and Quantitative Analysis I 4:3:3:0

Prerequisite(s): CHE 112, MAT 150

Corequisite(s): CHE 205

This course begins a two-semester sequence in the analysis of chemical samples appropriate for any science major, but specifically designed for the chemical technology program. The course focuses on the unchanging principles of analytical chemistry while exploring the range of applications of analytical chemical methods. Achieved by lecture and laboratory experiences is a theoretic and practical understanding of a broad range of modern chemical methods and instrumentation, including statistical relevance; sample preparation; volumetric titrations; gravimetric analysis; and atomic absorption, emission, inductively coupled plasma, fluorescence, and phosphorescence spectroscopies.

CHE 212 Instrumental and Quantitative Analysis II 4:3:3:0

Prerequisite(s): CHE 211

Corequisite(s): CHE 206

This is the second of a two-semester sequence in analysis of chemical samples appropriate for any science major, but specifically designed for the Chemical Technology program. The course focuses on the unchanging principles of analytical chemistry while indicating the range of applications of analytical chemical methods. Presented is a theoretic and practical understanding of a broad range of modern chemical methods and instrumentation, including ultraviolet/visible, infrared, and NMR spectroscopies; paper, thin layer, column, high performance liquid, gas, and electroseparation chromatographies; and analytical electrochemistry.

CHE 250 Selected Topics in the Natural Sciences 1:1:0:0

Prerequisite(s): BIO 110 and CHE 111, or permission of instructor

An interdisciplinary science course designed to introduce students to various topics within the natural sciences. Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme. Transcripts will list the second enrollment as BIO/CHE/PHY 251.

CHE 251 Selected Topics in the Natural Sciences 1:1:0:0

Prerequisite(s): BIO/CHE/PHY 250

An interdisciplinary science course designed to introduce students to various topics within the natural sciences. Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme. Transcripts will list the second enrollment as BIO/CHE/PHY 251.

Chinese**CHN 105 Elementary Chinese I 3:3:0:0**

An introductory first course to Mandarin Chinese language. It presupposes no prior knowledge of Mandarin Chinese. The course includes basic phonetic system of Chinese (Pinyin), basic character writing, sentence structure, and Chinese culture. Students will learn to listen, speak, write, and read at a beginning level.

CHN 106 Elementary Chinese II 3:3:0:0

Prerequisite(s): CHN 105 or equivalent

A continuation of CHN 105, with concentration on the simplified character forms of the Mandarin Chinese language. The course includes a study of the Chinese phonetic system (Pinyin), character writing, sentence structure, and expanded knowledge of Chinese culture. Further acquisition of language skills in listening, speaking, reading, and writing will be emphasized.

CHN 205 Intermediate Chinese I 3:3:0:0

The course is the first semester of the second year of Chinese studies. It is a continuation of CHN 106, with concentration on the simplified character forms. The course includes a continuation review and refinement of Chinese phonetic system (Pinyin), and character writing skills. Students will further develop proficient abilities to read, understand, speak, and write sentences and texts, and expand their knowledge of Chinese culture.

CHN 206 Intermediate Chinese II 3:3:0:0

Prerequisite(s): CHN 205 or equivalent

This course is the second semester of intermediate Chinese studies. It is a continuation of CHN 205. The course aims to help students to achieve a higher level of language proficiency. Students will further develop fluency in handling most daily conversation topics. Beside continuing enhancement in reading and listening comprehension, this course also offers students more opportunities to improve their speaking and writing abilities. Additionally, the course continues to expand the student's knowledge of traditional and contemporary aspects of Chinese cultures.

Communication

CMN 101 Introduction to Media Communications 3:3:0:0

This course provides a basic understanding of the theories, events, and technologies that enable electronic media to impact society. Students become familiar with the concepts and terminology of the various media including photography, radio, film, television, gaming, and social media. Hands-on projects using the latest in communication technology and discussion of current issues will prepare students for career choices in these industries and provide them with media for their portfolio.

CMN 105 Interpersonal Communication 3:3:0:0

Designed to provide a fuller understanding of self and others through the study and practice of interpersonal communication skills. Topics will include verbal and nonverbal messages, perception, listening, intercultural communication, and conflict resolution skills.

CMN 108 Introduction to Public Relations 3:3:0:0

Corequisite(s): ENG 105

This course will introduce students to the basic elements and principles of public relations. Students will learn to execute basic public relations research, develop a basic public relations plan, implement components of that plan and evaluate the results, and address crisis management. A variety of aspects of the field will be explored including ethics and legal considerations, measurement and assessment methods, and career possibilities.

CMN 112 Oral Communication and Presentation 3:3:0:0

Corequisite(s): ENG 105

Focuses on developing strong communication and presentation skills through practical application of speech communication theories in professional situations. Course content develops critical and creative thinking skills that focus on solving problems, building arguments, organizing presentations, and integrating technology. Students learn how to prepare and deliver a variety of clear, concise, and interesting professional presentations.

CMN 113 TV Studio Production 3:3:0:0

This course provides students with a thorough understanding of the process of producing multi-camera television programs. Students work in teams as they rotate through various crew responsibilities and program formats. Emphasis is given to creative and technical processes and the ability to collaborate as an effective team.

CMN 115 Argumentation and Debate 3:3:0:0

Corequisite(s): ENG 105

Focuses on argument as communication. Students will examine fundamental principles of logic, evidence, reasoning, as well as construction and effective presentation of arguments both in favor and in opposition to a proposition. Students will participate in both Lincoln-Douglas debates and team debates.

CMN 118 Media Scriptwriting 3:3:0:0

Prerequisite(s): ENG 105

Scriptwriting is used in radio, television, film, video, commercials, and corporate training presentations. Students will learn how to create effective scripts and storyboards for a variety of broadcast and media outlets.

CMN 120 Small Group Communication 3:3:0:0

Designed to improve students' understanding of the principles of small group communication so that they may function more effectively in groups. This course will help students become familiar with major theories and research in group communication and allow students to improve their group communication skills through participation in small groups. Topics will include introduction to small group theory; problem solving and decision making; team building; communication climate; conflict management; and roles, norms, status, power, and leadership.

CMN 121 Introduction to Communication Theory 3:3:0:0

Designed to provide an introduction to basic communication theories through study and application. This course integrates various areas of the discipline to provide an overview of communication topics, including verbal and nonverbal messages, interpersonal communication, small group communication, interviewing, perception, listening, and intercultural communication.

CMN 125 Introduction to Theatre Arts 3:3:0:0

This class will introduce the student to various forms of theatre ranging from the Ancient Greek to the Contemporary forms of plays performed today. By reading as well as seeing actual productions the student will become aware of the importance the role of theatre has and does play in society. Through this study the student will become familiar with drama, theatre history, and theatre production. Further the student will engage in hands-on activities that familiarize them with the art of acting, directing, playwriting and stagecraft. This course will serve as a foundational anchor for the students to engage in and explore more advanced and specialized fields of the entertainment industry.

The course will align itself with the requirements of most four-year Theatre degree programs as to allow for the transfer credits.

CMN 201 Intercultural Communication 3:3:0:0

Prerequisite(s): CMN 105

In an era of rapid globalization, being able to communicate across cultures is imperative to our ability to function in a diverse workplace, city, and world. This course examines communication in the intercultural setting, both domestic and international. The course focuses on how culture influences the communication process and the development of relationships, and the dynamics of intercultural encounters. Emphasis will be given to diversity in the workplace.

CMN 204 Video Field Production 3:3:0:0

Textbooks and hands-on experience combine to offer an introduction to the theories, techniques and equipment used in video production for various digital media formats. Students explore the fundamentals of video production as they learn techniques used in the complete production process. The emphasis is on single camera techniques and field production. Projects are designed for professional portfolio development and student/client interaction.

CMN 205 Introduction to Video Editing 3:3:0:0

Through hands-on experience, students learn both the creative theories and technical aspects of video editing. Principles of audio/video editing and digital processes are emphasized. Learn the foundations of video editing using Final Cut Pro software at LCCC's state-of-the-art Apple computer labs.

CMN 230 Newspaper Production 3:1:0:150

Prerequisite(s): ENG 225 or permission of instructor, 150 hours newspaper edit, proof, production

This course will provide practical application of journalistic techniques through preparation of the online college newspaper, The Paw Print. The course will emphasize both the practical application and critical thinking skills needed for the development of a newspaper. The students—limited to two, who will serve as co-editors of the newspaper—will learn journalistic standards, editing, proofreading, typographical selection, headline writing, design, graphics, advertising and promotional campaigns, and overall newspaper production supervision.

Computer Forensics

CFS 105 Computer Ethics 3:3:0:0

Examines the impact ethical issues have on information technology. The course describes the methods to address these issues and focuses on the positive impact an IT professional should have in the field.

CFS 110 Introduction to Computer Forensics 3½:3:1½:0

Prerequisite(s): CIS 105; NET 110, 111; CIS 250; CFS 105

Describes how to properly conduct a computer forensics investigation using the appropriate computer forensic tools. It also details the court criteria for a witness to be considered an expert.

CFS 115 Introduction to Digital Security 3:3:0:0

Fundamental issues and concepts of digital security; aspects of computer and digital crime; methods to uncover, protect, exploit, and document digital evidence; tools, techniques, and procedure to perform computer and digital crime investigation.

CFS 145 Principles of Information Security 3:3:0:0

Prerequisite(s): CIS 105; NET 110, 111; CFS 105, 110; BUS 120

Examines the field of information security. Both the managerial and technical aspects are addressed. The student will identify control measures and develop and conduct a security audit.

CFS 155 Network Security 3½:3:1½:0

Prerequisite(s): CIS 105; NET 110, 111; CIS 250.

Networking students: permission from instructor

Corequisite(s): CFS 205

A comprehensive guide to network security is provided in this course. General security concepts discuss authentication methods, common network attacks and how to safeguard systems. Communication security covers remote access, email, the Web, directory and file transfer, and wireless data. Infrastructure security discusses the devices and media and the proper application of border controls, such as DMZs, extranets, and intranets. Cryptography evaluates symmetric and asymmetric algorithms, PKI certificates, and their application. Operational Security details disaster recovery, forensics, and continuity. The lab component provides the student with extensive hands-on experience in securing networks, intrusion detection, hot fixes, and installing and configuring a wireless network using a Cisco Aironet 340.

CFS 205 Intrusion Detection and Prevention 3:3:0:0

This course introduces intrusion detection systems (IDS) and demonstrates to students how these systems can be used to analyze attacks, mitigate damage, and track attackers.

CFS 206 Certified Ethical Hacker 3½:3:1½:0

Corequisite(s): NET 113

The goal of this course is to help students master an ethical hacking methodology that can be used in a penetration testing or ethical hacking situation. A highlight of this course is the ability to compete in the National Cyber League competition.

Computer Information Systems/ Computer Science/Networking

CIS 105 Introduction to Computers and Applications 3:3:0:0

Intended for students with little or no previous computer experience. The topics presented in this course include a survey of computer hardware, application and system software, data communications and networks, the societal impacts of technology, and ethics in the context of digital information. Students will have hands-on experience with popular spreadsheet, word processing, database, and presentation software packages in a networked environment. Students will also consider the criteria used to evaluate computer equipment for personal as well as organizational purchase.

CIS 110 Business Information Systems 3½:3:1½:0

Prerequisite(s): CIS 105, BUS 120* (*waived for Networking majors) or appropriate industry experience
Focuses on the value of information in organizations and investigates cost-effective methods of the application of computerized software tools to personal and work-group needs. The challenges of changing technology are considered along with strategies for change assessment and management. There is intensive hands-on work with Microsoft Office Software in labs. Particular emphasis is placed on the exchange and integration of electronic documents, spreadsheets, and databases. A team approach is used throughout the course as specific business case studies are presented that allow students to use the computer as a tool to solve the cases. Computer work is accomplished in a network environment.

CIS 111 Electronic Commerce 3:3:0:0

Examines the principles and practices used to develop successful Internet commerce applications for an organization. Students will be exposed to strong market forces created by the convergence of the Internet and commerce.

CIS 112 Computational Thinking and Programming Logic 3:3:0:0

Computational thinking is the collection of skills that we use for problem solving that involves logical, algorithmic, and innovative thinking. In this course, students will attempt to solve a variety of real-world problems using these methods of thinking. Computational thinking skills form the foundation of computer programming so, to apply these skills, programs will be developed in the course to develop simple computer-based games using game engine software thus translating human intelligence into computational artifacts.

CIS 114 Introduction to Game Design 3:3:0:0

Prerequisite(s): ENG 100 or a LCCC English Placement Testing score of 57

This course teaches the foundations of game design theory and also serves as a survey on the origins and progression of the video game field. In addition to learning about the history of electronic games, students will analyze games and game-play elements, examine genres and trends in games, formulate their own proposals for original games, and work to develop these games into non-digital playable prototypes. The course will also give students hands-on experience with many games from earlier eras and will encourage students to discuss the current state of the video game industry, as well as possible future developments. This course requires no knowledge of computer programming or computer graphics.

CIS 116 Adobe Dreamweaver 1:1:0:0

Prerequisite(s): CIS 141 or equivalent knowledge of HTML and CSS

This course explores the use of Adobe Dreamweaver as a tool to design and create websites more efficiently and effectively. The various features of Dreamweaver will be used to create attractive web pages using Cascading Style Sheets (CSS) along with built-in elements including templates and widgets.

CIS 118 Game and Simulation Programming Fundamentals 3½:3:1½:0

Prerequisite(s): CIS 112

Corequisite(s): ART 118

This course teaches the fundamentals of 2D computer game and simulation development in ActionScript 3 using FlashDevelop as the Integrated Development Environment. This course is taught as a learning community with ART 118.

CIS 119 College Survival Bootcamp 1:1:0:0

An orientation course on making a successful transition to college and the School of Communication Arts, Computers, and Technology. Topics include: study skills, time and financial management, netiquette, critical thinking, academic planning, goal setting, diversity, and campus resources.

CIS 133 User Experience Design 3:3:0:0

This course explores issues and concepts involved in designing effective user experiences (UX) involving human-computer interaction (HCI). Students will design user-centered interactions for a variety of computer-based software and hardware products primarily focused on personal, internet, and mobile computing platforms. Emphasis will be placed on designs for game and simulation environments. Best practices of information architecture and usability will be examined and applied through project work.

CIS 134 Object-Oriented Programming with Python 3½:3:1½:0

This course explores object-oriented programming using the Python programming language. Students will learn and utilize decision making, looping, lists, dictionaries, classes and GUI concepts.

CIS 141 Client-Side Scripting I 3½:3:1½:0

Covers the basics of developing Web pages using HTML and JavaScript at a beginning to intermediate level. The material covered in this course is extended in CIS 142.

CIS 142 Client-Side Scripting II 2:2:0:0

Prerequisite(s): CIS 141 or appropriate industry experience

This course extends the basic concepts of client-side scripting covered in CIS 141. Topics covered include JavaScript, jQuery, and Cascading Style Sheets. Team-based project work is an integral part of the course.

CIS 145 Systems Analysis and Design 3:3:0:0

Prerequisite(s): CIS 105 or appropriate industry experience

Considers current methodologies used to analyze and design computerized solutions in workgroup and enterprise settings using a variety of tools with major emphasis on client/server technologies. Case Tool and project management software will be used to allow students hands-on experience designing systems.

CIS 155 Introduction to Computer Science – Structured Programming – C++ 3½:3:1½:0

An algorithm design and structured programming course using C++. Covered will be elementary data types and data operations, functions and parameter passing, looping, selection, arrays, structures, file I/O, and string operations.

CIS 165 Data Structures 3½:3:1½:0**Prerequisite(s):** CIS 155

Extends the use of object-oriented programming introduced in CIS 155 with the concepts and usage of abstract data types. Covered in detail are recursion, linked lists, stacks, queues, class relationships, algorithm efficiency, sorting, searching, trees, tables, priority queues, and graphs. The language used is C++.

CIS 172 Java I 3:3:0:0

Teaches the student the base language, object-oriented programming, and the class libraries. Topics covered include language basics, object-based and object-oriented programming, applets, event handlers, and Swing. Class time allows students to practice writing and executing programs using concepts learned in lecture.

CIS 180 Introduction to Project Management 3:3:0:0

This course examines the principles and practices used to manage successful projects for an organization. The Project Management Institute's (PMI) framework is the foundation for the course. Concepts and techniques covered in the course are applicable to all majors including business, computer information systems, engineering, healthcare, and many others. Microsoft Project is the software used to automate project planning and analysis.

CIS 181 3D Game and Simulation Programming 3½:3:1½:0**Prerequisite(s):** CIS 112 or experience programming in any computer language

This course introduces students to game and simulation development in a 3D environment using a commercial game engine. Students will learn to manipulate 3D objects to implement gameplay mechanics. Game projects will be produced in partnership with digital arts students.

CIS 207 Unix Server-Side Scripting 3:3:0:0**Prerequisite(s):** CIS 105, 141, 255

This course covers the basics of PHP server-side electronic commerce website development. MySQL is used as a database for the course.

CIS 209 Computer Game and Simulation Capstone 3:3:0:0**Prerequisite(s):** ART 118; CIS 118, 133, 155, 180

This is the capstone course for the Computer Gaming and Simulation Program Programming track. In this course, students will utilize the skills that they have developed in previous courses to create three-dimensional game/simulation projects in a team-based environment. Students will participate in the design, production and project management process while utilizing their digital arts skills to develop a computer game.

CIS 222 Application Development for Mobile Devices 3:3:0:0**Prerequisite(s):** CIS 105 and experience in application design and programming using an object-oriented language

This course explores software development for the major platforms that make up mobility solutions with an emphasis on iPhone development. Interface design and programming approaches are considered. The unique development challenges these devices present, their capabilities, and their limitations are investigated. Students will develop applications using casual and serious games as subject matter.

CIS 225 Computer Organization and Architecture 3:3:0:0**Prerequisite(s):** CIS 105 or appropriate industry experience

Examines the organization and architecture of computers from the perspective of a professional in the computer industry. The compatibility and integration of hardware and software systems are emphasized.

CIS 226 Advanced Multimedia Design 3:3:0:0**Prerequisite(s):** ART 107 and 108 or ART 140

Students will utilize the tools presented in previous courses to further explore Computer-Generated (CG) design concepts and creativity. Students will build complex Web-based interactive interfaces and dynamic multimedia elements by utilizing the strengths of Adobe Photoshop and ImageReady. Students will design an extensive project that will serve as the premiere design for individual portfolios.

CIS 250 Operating Systems 3:3:0:0**Prerequisite(s):** CIS 105

Examines the role of the operating system with regard to computer hardware and software. Methods of memory processes as well as device and file management are explored on current operating system platforms.

CIS 255 The Database Environment 3½:3:1½:0**Prerequisite(s):** CIS 105

Examines the application of database management systems and development tools in personal, workgroup, and enterprise settings. Particular emphasis is placed on data modeling using the Entity-Relationship Model. Oracle is used for all lab projects.

CIS 258 Multimedia Practicum 3:3:0:0**Prerequisite(s):** Instructor approval required

This course serves as an optional program capstone for the Computer-Generated Digital Art and Animation degree. Students must submit a proposal for a project that they intend to complete for the duration of the course in order to be approved by the Practicum instructor. Students may also choose to seek an Internship to fulfill the practicum. Specific requirements of the project or the internship will be outlined, if a student is accepted into the course. The course is intended to allow students to produce completed, polished work for inclusion in a portfolio or demo reel, to gain real-world experience via an internship within the digital arts field, or to otherwise prepare for future employment. Regardless of whether the practicum is a project or internship, students will need to meet strict deadlines and produce appropriate work for those deadlines, in order to simulate real-worlds work experience. Since different projects and internship opportunities have different skill requirements, the instructor of the Practicum will determine students' eligibility on a case-by-case basis.

CIS 280 Object-Oriented Programming with Visual Basic.NET 3:3:0:0

Prerequisite(s): CIS 105 or appropriate industry experience

Corequisite(s): CIS 255 or appropriate industry experience

The focus of this course is the programming language Visual Basic.NET. Students will develop applications using the language throughout the course and will be expected to complete many programming assignments using beginning through advanced level features of the language. Design issues in Graphical User Interface (GUI) will be considered throughout the course. Students must have experience in system design and database development to understand and complete the assignments but no prior knowledge of Visual Basic is required.

NET 109 Orientation to IT Professionals 1:1:0:0

This course provides guidance on exploring the professional opportunities in the Information Technology workforce. The class provides a self-exploration of the careers currently available in the IT workforce. Participants will learn how and where to gather data associated with currently advertised jobs. Each student will complete an extensive job search, perform and analyze their findings and present the employment knowledge, skills and abilities required of each job posting. Participants will also be asked to identify associated professional certifications, professional associations, current issues and salaries. The course includes a self-assessment survey and creation of a custom study plan for each participant.

NET 110 Network Essentials 3:3:0:0

Prerequisite(s): CIS 105 or pretest of at least 18

Provides a foundation in current network technologies for local area networks (LANs), wide area networks (WANs), and the Internet. An introduction to the hardware, software, terminology, components, design, and connections of a network, as well as the topologies and protocols for LANs is included. It also covers LAN-user concepts and the basic functions of systems administration and operation. Provides the information necessary to take the CompTIA Network + Exam.

NET 111 A+ Essentials 3:2:2:0

For the student who has basic knowledge and experience with personal computers (PCs) and wants to pursue a career as a computer technician, system engineer or local area networks (LAN) administrator. This course incorporates installation, configuration, upgrading, diagnosing and troubleshooting, preventative maintenance, motherboard, processor and memory, printers and basic networking.

NET 113 A+ IT Technical Support 6:6:0:0

Prerequisite(s): CIS 105

A+ IT Technical Support is for the student who has basic knowledge and experience with PCs and who wants to pursue a career as a computer technician, system engineer or network administrator. A+ establishes best practices in troubleshooting, networking and security across a variety of devices to set the stage for IT careers. The certification also matches professional tech skills with communication skills. This course complies with the guidelines set by CompTIA for the A+ certification. With appropriate study a student can pass the certification exam.

NET 121 A+ Practical Application 3:2:2:0

Prerequisite(s): NET 111

For the new computer professional who has support-level knowledge of personal computer (PC) hardware, but needs to expand upon that knowledge to learn the basic skills to set up and support the operating systems that run on PCs. Students will focus on the Microsoft operating systems included in the updated CompTIA A+ Certification exam. Current operating systems will be explored.

NET 129 Installing and Configuring Windows Server 2012 3½:3:1½:0

Prerequisite(s): NET 111 and NET 121

This course is part one of a three-part series that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment. The three courses collectively cover implementing, managing, maintaining, and provisioning services and infrastructure in a Windows Server 2012 environment. While there is some cross-over in skills and tasks across the courses, this course primarily covers the initial implementation and configuration of core services including Active Directory Domain Services (AD DS), networking services, and Microsoft Hyper-V Server 2012 configuration.

NET 139 Administering Windows Server 2012 3½:3:1½:0

Prerequisite(s): NET 129

This course is part two in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment. The three courses collectively cover implementing, managing, maintaining and provisioning services and infrastructure in a Windows Server 2012 environment. Although there is some cross-over of skills and tasks across three courses, this course primarily covers the administration tasks necessary to maintain a Windows Server 2012 infrastructure such as Implementing Server Images, User and Group management with Active Directory Domain Services (AD DS) and Group Policy, Remote Access and Network Policies, Data Security, Monitoring and Update Management.

NET 149 Configuring Advanced Windows Server 2012 Services 3½:3:1½:0

Prerequisite(s): NET 139

This course is part three in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment. The three courses will collectively cover implementing, managing, maintaining and provisioning services and infrastructure in a Windows Server 2012 environment. Although there is some cross-over of skills and tasks across these three courses, this course primarily covers advanced configuration of services necessary to deploy, manage and maintain a Windows Server 2012 infrastructure, such as advanced networking services, Active Directory Domain Services (AD DS), identify management, rights management, Federated services, network load balancing, failover clustering, business continuity and disaster recovery.

NET 210 Linux Installation and Administration 3½:3:1½:0

Prerequisite(s): CIS 105 or pretest score of at least 18; NET 111, 121

This course will provide the student with a comprehensive overview of the Linux operating system. By the end of the course, the student will not only be familiar with the Linux command-line environment, utilities, and applications, but also with the graphical X Window environment. Additionally, this course will provide a solid foundation for those students wishing to take the CompTIA Linux + exam, as well as the skills for day-to-day Linux administration.

NET 220 CCNA 1 – Introduction to Networks 3½:3:1½:0

Prerequisite(s): CIS 105 or pretest score of at least 90%
NOTE: NET 111 can be taken concurrently, but it is not mandatory

Introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing scheme.

NET 225 CCNA 2 – Routing & Switching Essentials 3½:3:1½:0

Prerequisite(s): NET 220

This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 network.

NET 230 CCNA 3 – Scaling Networks 3½:3:1½:0

Prerequisite(s): NET 225

This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of the course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network.

NET 235 CCNA 4 – Connecting Networks 3½:3:1½:0

Prerequisite(s): NET 230

This course discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network.

NET 280 Computer Specialist – Network Technology Internship 2:0:0:150

Prerequisite(s): CIS 105 or pretest score of at least 90%; NET 111, 121; Students must have completed half of the credits in their program with a minimum 2.3 cumulative grade point average (GPA) and have been approved by the appropriate faculty member.

The student will work in a supervised internship in the community. The work assignment is selected according to the student's career goals. Students should apply for this learning experience through the appropriate faculty member at least six weeks prior to the end of the semester proceeding the work period.

Construction Technology/Management**CON 102 Framing Construction Techniques 4:3:3:0**

Prerequisite(s): HAC 119 or equivalent

Provides students with knowledge of materials, equipment, and procedures necessary for residential and light commercial structures. Students will be involved in specifying materials and construction procedures for a basic framed construction project. Also covers the importance of utilizing the proper equipment and tooling for various types of framing projects.

CON 103 Interior/Exterior Finishing 4:3:3:0

Prerequisite(s): HAC 119 or equivalent

Provides students with knowledge of how to finish the interior and exterior of residential and light commercial structures. Students will be exposed to a variety of materials commonly used in finish construction as well as the proper procedure for installation. Requires students to demonstrate several techniques studied on a building project.

CON 104 Concrete/Masonry Principles 3:3:1:0

Prerequisite(s): HAC 119 or equivalent

Provides students with knowledge of concrete and masonry used in the building industry. Types of materials and their applications. Structural and ornamental type masonry materials. Footing, foundation, and fireplaces will also be explained.

CON 105 Architectural Computer Applications 2:2:0:0

Prerequisite(s): HAC 119 or equivalent

Provides students with use of the microcomputer for architectural applications. Various computer architectural software packages will be utilized throughout this course to illustrate the benefits of computer-aided designing.

CON 201 Basic Surveying 3:3:0:0

Prerequisite(s): MAT 130

Provides students with a foundation in surveying techniques and related equipment necessary for a construction site layout. Topics covered will be surveying concepts relating to layout, measurement, and computations. Also included will be the proper usage of both traditional and modern surveying instruments, and the field procedures necessary for a layout.

CON 202 Construction Estimating 3:3:0:0**Prerequisite(s):** HAC 119 or equivalent

Provides the students with knowledge of building construction estimating. Material take-off sheets and cost analysis will be developed for accuracy in a construction project. An introduction to the bidding process and subcontracting. Students will be exposed to regulatory issues such as contracts, insurance, and building codes.

CON 204 Construction Codes and Specifications 3:3:0:0**Prerequisite(s):** HAC 119

This course will introduce the principles of how to read and interpret the International Residence Code (IRC) Book as well as to be able to apply these standards to construction drawings and real world situations. Students will learn these code standards and specifications through the written guidelines, tabulated data, and charts found throughout the IRC Code Book. The major areas of concentration will be site work, foundations, rough framing, and final building structure inspection.

CON 210 Construction Practicum 4:3:3:0**Prerequisite(s):** CON 102

Provides the student with personal experience in the construction field by working through a construction project. Students will work from initial stages of construction through to finished construction. Also included will be drawings, costing, purchasing, and billing. Projects must be approved by instructor.

CON 220 Construction Management 3:3:0:0**Prerequisite(s):** CON 202

Provides students with knowledge necessary for managing or operating an effective construction team. Introduces topics relating to construction, such as employees, documentation, specifications, labor relations, and safety.

Cooperative Education**CED 272 Cooperative Learning Experience 1-6:0:0:75-450**

Prerequisite(s): Students must have completed half of the credits in their program with a minimum 2.3 cumulative grade point average (GPA) and have been approved by the appropriate dean.

The student will work in a supervised internship in the community. The work assignment is selected according to the student's career goals. Students should apply for this learning experience through the appropriate department dean at least six weeks prior to the end of the semester preceding the work period. The number of credits earned in the course is usually based on one credit for 75 hours of work experience. CED 272 may not be repeated for credit. A maximum of six credits can be earned through the Cooperative Learning Experience.

Criminal Justice Administration**CJA 101 Introduction to the Criminal Justice System 3:3:0:0**

A review of the total criminal justice system. The five primary elements of the system—police, criminal courts, probation, prisons, parole—are studied. Interrelationships are stressed and problem areas discussed, particularly with respect to Constitutional guarantees.

CJA 104 Introduction to Private Security and Loss Control 3:3:0:0

An overview of the private security and loss-control field. The industrial, philosophical, and legal basis of security are examined. The role of security in industry, government, and society at large is explored. The principles of loss prevention are reviewed and critiqued.

CJA 105 Criminal Investigations 3:3:0:0

Principles of criminal investigation are studied. The crime scene search, interview and interrogation, surveillance, and records are stressed. The techniques used in special investigations, collection and preservation of evidence, and preparation for a police case in court are also covered.

CJA 106 Introduction to Homeland Security 3:3:0:0

This course provides an overview of the governmental response to improve the security and safety of the United States. The course begins with the historic perspective of the threat of terrorism and concludes with a details description of the extraordinary legislative and organizational actions and support of preventing future terroristic attacks.

CJA 116 Corrections Administration 3:3:0:0

This course is designed to provide a broad overview of correctional history, theory and problems, as well as an examination of the American correctional system including incarceration facilities, community corrections, and juvenile detention and placement facilities. The physical institution and the function of all role players, including inmates, correctional staff, the government, and the community, within the institution and beyond are examined.

CJA 119 Juvenile Justice 3:3:0:0

The focus of this course is to introduce students to the juvenile justice system, its components, and functions. Court processes, legal cases, and legislative initiatives will be addressed. In addition to examining the evolution of the juvenile justice system and transformation of the juvenile court, students will gain an understanding of the current issues in the adjudication and treatment of juveniles in the United States.

CJA 201 Criminal Evidence and Court Procedure**3:3:0:0**

Examines the historical background, traditions, and the legal principles that underlie the courts as an integral component of the American system of Criminal Justice. The differences and similarities inherent within the state and federal court processes are analyzed and the procedures through which the criminal courts uphold the basic rights and liberties of all U.S. citizens, both victims and the accused, are explored. Primary focus is placed upon understanding the roles of personnel in the criminal court process.

CJA 215 Law Enforcement and Society**3:3:0:0**

CJA 215 is an examination of the role of the police in society today and the concept of community policing. An emphasis will be placed on conflicts which develop internally and with intra agencies as the police accept responsibility for providing a wide variety of non-enforcement functions. The police officer's role in getting and maintaining public support is reviewed; also, the recognition and understanding of community problems, community action programs, methods of coping with crisis situations, ethnic and minority cultures, environments and police operations in relation to these.

CJA 225 Probation and Parole**3:3:0:0****Prerequisite(s): CJA 116**

Probation as a judicial process and parole as an executive function are examined. Innovative and progressive practice in federal, State, and municipal systems are explored so that the student has a working knowledge of the theory and practice in such community-based programs as work-release, halfway houses, and contract program planning. The criminals' attitude toward society and the rehabilitative process are studied.

CJA 234 Ethics in Criminal Justice**3:3:0:0****Prerequisite(s): CJA 101**

This course explores the study of ethics, particularly as it applies to the field of criminal justice. Focus is placed on providing a basic framework for understanding morality and ethics, then applying those concepts to the development of critical thinking and decision-making skills as they relate to the field of criminal justice.

CJA 235 Seminar on Police Problems**3:3:0:0****Prerequisite(s): Satisfactory completion of 15 semester hours in Criminal Justice Administration**

Critical issues affecting the criminal justice system are examined. Students explore issues of their choice for class preparation and presentation. Class visits are made to local agencies within the criminal justice system.

CJA 240 Criminal Law**3:3:0:0**

Substantive criminal law is examined to understand the law as a foundation of the justice system. Examples are taken from the Pennsylvania Crimes Code. The use of discretion and the trends toward increasing criminal and civil liability risks are explored.

Culinary Arts**CUL 105 Culinary Foundations****3:1½:4½:0**

This course serves the need for the culinary student to acquire fundamental knowledge necessary to their development as a professional chef. Key concepts related to the background of the food service industry, culinary math, menu development, kitchen organization are explored. Students will also learn the foundational skills that are required to produce great foods. Leading preparations of stocks, soups, sauces, vegetables, grains, and starches begin the transformation of the student cook to the professional chef.

CUL 115 Culinary Techniques**3:1½:4½:0**

The building of the student chef's repertoire (a collection of dishes one knows how to make) is vital to their continued success in the hospitality field. This course focuses on the techniques needed to prepare a variety of foods and builds cooking skills by applying these techniques to starches, vegetables, breakfast foods, sandwiches and hors d'oeuvres.

CUL 120 Meat and Seafood Identification**3:1½:4½:0**

Meat and seafood preparation counts for a large percentage of the food purchases in the marketplace. Therefore, it is critical that the culinarian acquire knowledge of the various categories of meats and seafood, how to prepare them for cooking, and necessary steps in the cooking process. This course moves through the primary categories of meats and seafoods and provides the opportunity to fabricate and practice basic preparations.

CUL 125 Garde Manger**3:1½:4½:0**

The techniques in this course belong to the culinary department known as "Garde Manger," whose basic meaning is "larder" or "food storage place." Because of its cooler temperatures, this area was often used for cold food preparations. Garde Manger includes techniques of salad production and dressings, charcuterie and cold platter design. Studying Garde Manger challenges the student culinarian to develop a deeper understanding of food preparation and refine their skills.

CUL 130 Baking Fundamentals**3:1½:4½:0**

Baked goods rely on simple ingredients to create complex products. To produce these products, the student chef must develop an accurate sense of measurement and an eye for quality. Becoming knowledgeable about the processes and ingredients in the bakeshop is an important step toward producing high quality baked goods. This course focuses on the foundations required to produce a wide variety of baked goods including breads, cakes, pies and cookies.

CUL 231 International Cuisines**3:1½:4½:0**

The study of international regional cuisines is vital to the development of the student chef. The increased accessibility of travel, the reach of globalism, and wave of immigration has led to the desire for international foods in the marketplace. Building on the fundamental techniques and ingredient awareness, this course strives to develop sensibilities in how to apply our culinary knowledge to produce foods with distinct flavor profiles. Doing so opens a world of creative possibilities for the student chef.

CUL 235 American Regional Cuisine 3:1½:4½:0**Prerequisite(s):** CUL 105, CUL 115, HRM 131

The ongoing study of regional cuisines is critical to the development of the hospitality professional. The United States presents us with an excellent opportunity to study a wide variety of cuisines with numerous influences. This course studies regions identified throughout the United States. By researching foods, preparing dishes, and tasting results, the student culinarian will develop a sense of the flavor profiles associated with American regional cuisine.

CUL 250 Culinary Arts Practicum 3:1:0:150**Prerequisite(s):** HRM 131**Corequisite(s):** CUL 231, 235

This Capstone course is designed for the student chef to apply aspects of their learning in a comprehensive setting. As a team, students work with their chef instructor to design and prepare an open-to-the-public, farm-to-table event.

Digital Media

DMP 115 Principles of Sound Production 3:3:0:0

An introduction to the principles of sound and audio technology, this course presents an overview of the production process. Students will learn basic concepts and theories through listening exercises and practical experience. Evaluation and production for radio and audio in media are emphasized.

DMP 116 Sound Design for Animation 3:3:0:0

This course examines the core principles of sound, which serves as an introduction to sound recording, sound design and audio editing. Students will learn basic concepts and theories of audio, through practical examples and hands-on demonstrations, with a focus on applying those concepts toward mixing audio for use with animation and other time-based media. Students will utilize industry-standard hardware and software to produce sound-based projects to both develop skills and for use in portfolios.

DMP 155 Announcing and Presentation 3:3:0:0**Prerequisite(s):** CMN 118; ENG 111

Develops proficiency in vocal skills through active listening, oral interpretation, fundamental announcing techniques, and presentation management. A variety of classroom experiences will be used.

DMP 216 Digital Audio Production 3:3:0:0**Prerequisite(s):** DMP 115

Students build upon concepts presented in DMP 115 as they learn the fundamental principles of digital audio through hands-on experience. Emphasis is on recording and producing sound for picture with introduction to music recording and MIDI concepts. Students utilize industry standard equipment and software, performing basic operations on both personal computer (PC) and Macintosh platforms.

DMP 220 Advanced Video Production 3:3:0:0**Prerequisite(s):** CMN 113, CMN 205

Designed for students to enhance skill sets in their desired areas of interest. Students collaborate on projects for clients in industrial/commercial video. Production techniques for emerging technologies are presented.

DMP 225 Audio Post Production 3:2½:1½:0**Prerequisite(s):** DMP 216

Building upon skills learned in DMP 216, students advance their skills in editing and multi-track mixing. Mixing philosophies for various mediums are explored. Students utilize industry standard software to further experiment with signal processing. Multiple soundtracks with dialog, music, and effects are created, mixed, mastered and output to a range of delivery formats.

DMP 250 Communications Media Practicum 6:1:0:375**Prerequisite(s):** CMN 113 or DMP 216

The internship provides the student an opportunity to apply skills and knowledge acquired in the classroom to an actual work environment. This supervised experience includes observation, hands-on opportunities, and written analysis of the internship. Internships may be done at approved broadcast- or media-related facilities. Students will spend 75 hours per credit, including an occasional meeting with the instructor. An additional three credits (225 hours) must be taken as either an internship, practicum, or independent study.

Drafting and Design

Courses for the degree or certificate in drafting and design are listed under "Mechanical Technology."

Early Childhood Education

ECE 110 Fundamentals of Early Childhood Education 3:3:0:0

Course offers an analysis of early childhood education through historical, theoretical, current, and future perspectives. Discussion of principals of curriculum models, key theorists, current teaching trends and best practices is included. Emphasis will be on professional organizations, environments, diversity, families, and community resources.

ECE 120 Children's Growth and Development 3:3:2:0

Requirements: two hours per week of lab in an early childhood education setting and an updated physical exam

Course introduces principles and theories of child development and sequence of development domains in children aged birth through nine years. Course also accents the impact of health, safety and nutrition on early childhood development. State licensing, developmentally appropriate practices, Department of Public Welfare regulations, PA Early Learning and NAEYC standards are presented.

ECE 125 Education and Care of Infants and Toddlers**3:3:2:0**

Requirements: two hours per week of lab in an infant or toddler education setting and an updated physical exam. To participate in the required fieldwork experiences, a “no record,” status must be reported on the PA Child Abuse History Clearance. The PA State Police Criminal Record Check results must fall within the guidelines of the law, as set forth by the Commonwealth of Pennsylvania.

This course introduces program planning to meet the specific developmental needs of infants and toddlers. The course incorporates research-based best practices, learning environments, the importance of play, health, safety and nutrition for children aged birth through three years. Department of Public Welfare regulations, PA Early Learning and NAEYC standards and developmentally appropriate practices for infants and toddlers are presented.

ECE 130 Integrating the Arts and Play in Early Childhood**3:3:2:0**

Requirements: two hours per week of lab in an early childhood education setting and an updated physical exam

Course reviews theories related to the stages of childhood development in play and the creative arts. Strategies for developing and implementing learning opportunities in visual art, creative drama, music, movement, social studies and play are presented. Course focuses on writing instructional objectives and implementing lesson plans based on children’s developmental skills. Department of Public Welfare regulations, PA Early Learning and NAEYC standards are presented.

ECE 140 Observation and Recording Techniques**3:3:2:0**

Requirements: two hours per week of lab in an early childhood education setting and an updated physical exam

Course highlights goals, benefits, and techniques of systematic observation of children and their families in their natural settings. Students utilize assessment strategies and documentation, including The OUNCE Scale and the Work Sampling System to create child portfolios and to develop program planning based on observed strengths and needs of all children.

ECE 200 Young Children With Special Needs**3:3:0:0**

Introduces students to inclusion of young children with special needs into typical early childhood classrooms. Students are exposed to federal special education laws related to child issues and family rights. Students learn about types of disabilities and learn how to adapt curriculum and materials to meet individual needs.

ECE 205 Math & Science for Early Childhood**3:3:2:0**

Course explores developmental theories and content in science and math curriculum for children aged birth through five. Principles and methods for teaching math and science concepts through “active discovery, play, and design of developmentally appropriate materials will be highlighted. Students will plan environments and implement math and science learning opportunities based on PA Early Learning, NAEYC, NCTM and NSEC Standards.

ECE 210 Integrating Curriculum in Early Childhood**3:3:2:0**

Prerequisite(s): ECE 130

Requirements: two hours per week of lab in an early childhood education setting and an updated physical exam

Course introduces effective approaches to teaching mathematics and science in early childhood education. Students learn techniques based on PA, NAEYC, and NCTM Standards to teach mathematical concepts, scientific process, problem-solving and reasoning discovery, data gathering and measurement through active manipulation of real objects. In this advanced curriculum course students design a balanced curriculum that incorporates emergent curriculum and the project approach to create developmentally appropriate units of study.

ECE 215 Language and Literacy**3:3:2:0**

Requirements: two hours per week of lab in an early childhood education setting and an updated physical exam

Course examines theories, current research and practice in language and literacy development for children aged birth to five years. Students develop competencies in designing print-rich environments and supporting foundations for learning to read and write. Students demonstrate strategies for creating effective language and literacy learning opportunities based on PA Early Learning and NAEYC standards.

ECE 220 Internship**6:1:0:375**

Prerequisite(s): ECE 110, 120, 130, 140, 210, 215 and permission of the Early Childhood Education department

In this culminating experience, students apply theory gained from all early childhood education courses. Under the supervision of an early childhood professional students learn to develop further competencies and take increasing responsibility for creating environment and curriculum of an early childhood classroom. Course provides students the opportunity to intentionally plan and implement developmentally and culturally appropriate instructional strategies based on local, state and national standards. Course requires students to be on site teaching for 25 hours per week for 15 weeks.

ECE 225 Early Childhood Professional**3:3:0:0**

Students study and reflect upon the ethical and professional responsibilities of the early childhood profession. Family involvement, communication and parent conferences will be focused upon. Students learn PA regulations for child care centers and the NAEYC – National Association for the Education of Young Children accreditation process. Issues involved in advocacy, best practices in classroom management, and participation as an effective early childhood colleague will be introduced. Professional portfolio development encourages students’ preparation for future interviewing, self-assessment and continuing professional growth.

ECE 230 The Director With Vision 3:3:0:0

Students will explore their educational philosophy through current research and standards. Strategies will be introduced to assist directors in helping staff create a vision of best practices for curriculum development and quality environments. Directors and future directors will explore effective communication techniques for working with children, families, and community.

ECE 235 Program Organization and Management 3:3:0:0

Students will study the administrative role of the director. Strategies will be explored for planning fiscal operations, program management, and day-to-day administration of early care and education programs.

Early Childhood Education/ Early Intervention

ECI 115 Family-Centered Early Intervention Field Experience 1:1:0:0

Field observation and teaching experiences in early intervention require a minimum of 40 hours of observation and participation in early childhood special education classrooms and in shadowing of professionals on home visits. Students gain a more in-depth understanding of the early intervention system and effective family-centered service strategies. Documentation of the field experience will be the completed field experience portfolio.

ECI 205 Early Childhood Guidance for Inclusion Settings 3:3:0:0

Focuses specifically on the process of guiding young children. Emphasis on the long-term goals of how to help children to develop a healthy sense of self-control; to like and respect themselves; to treat other people and animals with respect; and to be competent, independent, cooperative, and responsible.

ECI 220 Early Childhood Education/ Early Intervention Internship 8:1:18:0

Students in the associate in applied science degree will spend 18 hours per week for 15 weeks for a total of 270 hours under the supervision of an early childhood/early intervention professional for eight credits. Students in the certificate program will spend 16.5 hours in eight weeks for a total of 132 hours for four credits under the supervision of an early childhood/early intervention professional. Students will be placed in inclusive or specialized early intervention settings. Students will take their accumulative learning and apply it to actual experience.

ECI 230 Principles of Family-Centered Early Intervention 3:3:0:0

Introduces the philosophy and components of family-centered care. Traces the historical development of family-centered philosophy and examines how culture plays an important part in developing family priorities. Also examines stresses that influence families today. Assists students in developing tools in which they will be able to assist families identifying their own needs. The student will be able to identify resources in the community, both human and material, and will be able to assist families in obtaining these resources while allowing the family to maintain its integrity. Students will learn and practice help-giving techniques that promote family empowerment rather than dependency.

ECI 240 Strategies for Teaching Infants and Toddlers With Special Needs 3:3:0:0

Emphasizes a comprehensive and practical approach to serving infants, toddlers, and their families in an inclusive developmentally appropriate environment. Studies will be organized around a transdisciplinary approach to early intervention services emphasizing that the physical and social environments of all children should be structured to support and enhance development. Students will be required to have field experiences with infants, toddlers, and their families at inclusive and/or agency-based facilities.

ECI 245 Curriculum for Inclusive Early Childhood Practices 3:3:2:0

Looks at the historical development of inclusive practices in early childhood. Students will learn to plan activities that are developmentally appropriate for individual needs and abilities. Students will learn to individualize a planned activity so that everyone can participate and achieve a measure of success regardless of the developmental level. Students will also learn how to make adaptations to toys and environment so that all children can play together.

Economics

ECO 201 Principles of Macroeconomics 3:3:0:0

Deals with macroeconomics which is a study of the economy as a whole. Basic concepts of supply and demand models are developed. Production and income determination and the role of government policies, both fiscal and monetary, are examined. Topics such as inflation; unemployment; business cycles; budget deficits; money and banking; and international finance will be included. A knowledge of elementary algebra is helpful.

ECO 202 Principles of Microeconomics 3:3:0:0

Deals with microeconomics which is a study of the decision making process of individual economic agents, both consumers and producers. Basic concepts of supply and demand models are developed. Various market conditions for both inputs and outputs and their impact on prices, costs, and production are examined. Topics such as government regulation, antitrust legislation, and international trade will be included. A knowledge of elementary algebra is helpful.

ECO 237 International Relations 3:3:0:0

This course will provide students with an overview of the field of international relations. Beginning with a historical survey of international relations, the course will then analyze issues related to security, the world economy and social issues. The implications of recent developments such as the end of the Cold War, European Integration, crises in the Middle East, and other major international issues will be analyzed.

Education**EDU 101 Foundations of Education 3:3:0:0**

Acquaints prospective teachers with the opportunities, preparation, and professional responsibilities of the teaching profession. Designed to familiarize members of the general public with the modern American education system as it pertains to their roles as parents, consumers, and taxpayers. It includes the historic background of the modern school system; the role of the school in community and society; the organization, administration, and support of American school systems; varying philosophies of education; and current governmental standards.

EDU 105 Introduction to Special Education 3:3:0:0

Requirement: 10 hours of field experience and observation

Presents a foundation of knowledge about the nature and needs of children with special needs, their families, and the community. Introduces the student to federal and state law, including the Individuals with Disabilities Education Act (IDEA) and Pennsylvania Commonwealth laws and regulations. The student will receive an overview of classifications of disabilities, cultural diversities, service options, and procedural safeguards. In addition, current issues, research, identification and assessment practices, support services, and strategies for educating students with disabilities are reviewed.

EDU 114 Careers in Education 1:1:0:0

Course will introduce education majors with career opportunities and employment options in the educational field. Designed to familiarize students with the modern American education system as it pertains to their roles as teachers, coaches, paraprofessionals, aids, or specialists. The course will include role descriptions for specialized job titles in a school; the working relationship of specialized education professionals; and the Pennsylvania requirements to hold specialized education positions.

EDU 115 Education Field Experience I 1:1:0:50

Initial field observation and teaching experience in school classrooms that precede student teaching requires a minimum of 50 hours of observation and participation in a variety of settings. Students gain a closer look at the teacher education system and the relationship of learning theory and effective teaching strategies. Documentation of the field experience will be the completed field experience portfolio.

EDU 120 Teaching With Technology 3:3:0:0

Provides prospective teachers with an understanding of how to incorporate educational technologies in the contemporary classroom. With an in-depth look at new and emerging technologies, students will discover ways to integrate technology with teaching and learning. Intended for students seeking to improve their technology experience in the classroom.

EDU 125 Linking Assessment and Instruction for Diverse Learners 3:3:0:0

Course emphasis will be on assessment and documentation of knowledge and learning styles as it reflects student achievement. The course examines the links between cognitive learning styles and physical, social, and emotional growth in diverse learners. Five hours of observation required.

EDU 150 Secondary Language and Literacy Development 3:3:0:0

Provides an overview of the major theories and current approaches of second language acquisition and implications for the academic success of English Language Learners (ELLs). Course also introduces factors that influence the ways in which second languages are learned, including age, L1, developmental level, motivation and attitude, cognitive style, and the effect of formal instruction. The course provides an introduction to linguistics, including phonology, morphology, syntax, semantics, and pragmatics and their application to the teaching of English as a Second Language (ESL). Instructional strategies for increasing literacy levels of English to Speakers of Other Languages (ESOL) students will be addressed as will the development of instructional materials that are appropriate for the literacy level of the intended ESOL student. This course will focus on listening, speaking, reading, and writing with regard to theory, research, and practice.

EDU 155 Teaching Diverse Learners 3:3:0:0

Provides students with a multicultural perspective and knowledge about cultural groups and the opportunity to reflect on the role of students' home languages and cultures in teaching and learning. Students implement and demonstrate approaches to teach in diverse classrooms and employ strategies to integrate students' cultural backgrounds and diverse learning styles in curriculum, instruction, and assessment. Students apply knowledge of sociolinguistics and contrastive linguistics to the teaching of English as a Second Language (ESL). The course also acquaints students with methods of increasing parental involvement in their children's education and includes activities and communication strategies that empower parents to support their children in achieving academic standards.

EDU 165 Aligning English Language Proficiency Development With Academic Standards**3:3:0:0**

Provides educators with the opportunity to develop an in-depth understanding of the PA/ESL standards for Pre-K through 12. Emphasis is on aligning English as a Second Language (ESL) listening, speaking, reading, and writing standards with curriculum, instruction, and assessment. The course will also focus on a literacy approach for English Language Learners (ELLs) that emphasizes the accessing of syntactic, semantic, and phonetic cueing systems. Students learn to apply effective instructional strategies for teaching ESL and employ appropriate assessment tools to improve instruction of ELLs. The course also familiarizes students with cognitive and sociolinguistic approaches and strategies that facilitate classroom management and contribute to a positive learning environment.

EDU 170 Teaching Language Through Content**3:3:0:0**

Presents the theoretical basis for content-based language instruction as a powerful approach for teaching reading, writing, speaking, and listening to English Language Learners (ELLs) and identifies strategies for making curricular content comprehensible to them. It presents strategies for developing cognitive academic language proficiency through the content areas. The course presents a variety of content-based instructional designs, including thematically organized instruction, literature-based instruction, task or project-based instruction, and SDAIE or sheltered English. It emphasizes the merging of language development and content instruction and provides strategies for teaching and assessing both language and content. The course also reviews the basic elements of grammar, syntax, and phonology, along with strategies for integrating these components into classroom instruction.

EDU 181 Technology and the English Language Learner**2:2:0:0**

Introduces students to a variety of computer applications, software, and Internet resources appropriate for use with English Language Learners (ELLs). Students will learn how to use PowerPoint, Web Quest, rubric makers, and simple graphics to create effective lessons for ELLs. They will also learn how to identify and evaluate resources for them.

EDU 183 Technology in the ESL Classroom**2:2:0:0****Prerequisite(s):** EDU 181

Provides students an opportunity to use the technology skills learned in EDU 181 to design and present a unit of instruction for English Language Learners (ELLs). Students will integrate Internet resources, websites, PowerPoint, and Web quest to support second language acquisition in a thematic unit. Students will present the lesson to the group.

EDU 201 Effective Teacher**3:3:0:0****Prerequisite(s):** EDU 115 or Teaching experience

The Effective Teacher focuses on the use of theory and research to understand and improve classroom teaching. Emphasis is on teacher reflection, decision making, and application of particular techniques. The impact of a teacher's expectations, motivation, classroom management, and instruction is discussed and used as a basis for best practice.

EDU 202 Fundamentals of Reading Instruction I**3:3:0:0**

An introduction to the teaching of literacy, reading and comprehension for diverse students across all grade levels. The course will focus upon research and strategies to support the current trends and practices in assessment and instruction of literacy, reading and comprehension. The course covers a full range of the reading curriculum, serving as an introduction to instructing students in tutoring, small groups and classroom settings. The class includes ten hours of field experience with students.

EDU 205 Principles of Teaching**3:3:0:0**

This course introduces students to the current structure of middle and secondary school teaching process, learning styles, and educational philosophy. Students will learn how to develop student objectives and design visual aids for the classroom. Students will also learn about the Pennsylvania content standards and how to organize content to begin the process of unit development. An electronic credential portfolio is started in this course.

EDU 210 Behavior Management and Guidance Practices**3:3:0:0****Requirement:** 10 hours of field experience and classroom observation

The course is an overview of behavior problems and disorders that may be encountered in early childhood, middle and secondary, and special education environments. Identification, classification, assessment and multidisciplinary services are examined with focus on management and intervention strategies. Fundamental principles of guidance and constructive discipline will be addressed.

EDU 215 Education Field Experience II**1:1:0:0**

Field observation and teaching experiences in school classrooms that precede student teaching requires a minimum of 40 hours of observation and participation in a variety of settings. Students gain a more in-depth understanding of the teacher education system. In addition to observation, tutoring and mentoring experiences will be required. Documentation of the field experience will be the completed field experience portfolio.

EDU 220 Internship**6:1:13:0****Prerequisite(s):** EDU 101, 105, 115; ECE 140, 215; MAT 125; SED 200, 205, 210

Allows the student to spend 182 hours in a field placement in an actual classroom under the supervision of a professional teacher. The student will be exposed to both inclusive and specialized settings.

EDU 240 Technology Integration in the Educational Setting 3:3:0:0

This course will present best practice for integrating technologies and enhancing instruction in an educational setting. Students will analyze current technologies for their effectiveness and use with diverse learners. Online collaboration and web literacy tools will be evaluated for effectiveness in building learning communities. This course is designed for individuals with intermediate computer skills.

EDU 260 Independent Study – Education 1–3:1–3:0:0

Prerequisite(s): Introductory course in the area and written permission of cooperating faculty member
Reading and/or experimentation, in group or individual study, on topics selected in consultation with a faculty member. Special attention is given to the particular abilities and interests of students, with individual guidance for advanced studies. The student may choose research on selected problems, supervised field studies, or reading programs, among other alternatives.

EDU 291 School Communication with Families 3:3:0:0

Course allows students to develop an understanding of the importance and complex characteristics of families and communication. Course will enable students to create respectful, reciprocal relationships with families that support and empower families and involve all families in their children's development and learning. Course will provide foundation and skill in the area of comprehending family dynamics, family structure and communications within diverse families. The course will focus upon dynamics that lead to conflicts between schools and families and how to implement effective means to resolve these conflicts via understanding communication patterns, cultural values and appropriate communication. The course is design for individual that work with families in a variety of situations, including early learning centers, schools, social service institutions and criminal justice environments.

Electronics Technology**ELE 120 DC Circuits 4:3:3:0**

Corequisite(s): BGT 110 or MAT 130

Presents basic principles of voltage, current, and resistance. Introduces solid state devices and their graphical characteristics. Covers resistance, color code, Ohm's Law, series and parallel circuits, voltage dividers, semiconductor diodes, and transistors. Students build basic electrical circuits in the laboratory and use electronic VOMs and digital multimeters to test circuits.

ELE 130 Digital Fundamentals 4:3:3:0

Digital Fundamentals is the study of the basic circuits common to digital computers, such as logic gates, "flip flops," counters and arithmetic circuits. The examination of various number systems and their applications are also studied. Laboratory work will include the use of logic pulser and logic probe to troubleshoot circuits. Multiple logic wave forms are examined with a logic analyzer.

ELE 155 Electronic Drafting and Construction 1:1:1:0

Presents basic drafting techniques used in schematic diagrams. Includes layout of printed circuit boards.

ELE 165 AC Circuits 4:3:3:0

Prerequisite(s): ELE 120

Examines voltage and current in inductor, capacitor, and resistor circuit arrangements. Introduces vector algebra. Presents oscilloscope use, series and parallel RLC circuits, resonance, time constants, and waveshaping. Students connect components into basic electrical circuits in the laboratory, and verify circuit operations using a dual tract oscilloscope. Computer software simulation programs are used to further check circuit operations.

ELE 175 Introduction to Microprocessors 4:3:3:0

Prerequisite(s): ELE 130

The course introduces students to microprocessors and microcomputers. Examined is microprocessor system organization and its instruction set. Also presented are input and output techniques and their microcomputer applications in real situations.

ELE 210 Electronic Circuits 4:3:3:0

Prerequisite(s): ELE 165 or 170

Students are introduced to standard electronic circuitry. Studies are the theory and application of diodes, junction transistors and FET transistors; circuit arrangements for coupling; and A.F. and R.F. voltage generation. Software simulation programs are used to verify circuit operations.

ELE 215 Industrial Electronics 2:1½:1½:0

Prerequisite(s): ELE 130

Corequisite(s): ELE 210

A study of sensing, control, and actuator devices and how they are used in an industrial environment. Topics included in the course are temperature, level and flow measurements, semiconductor control devices, industrial process actuators; digital control circuit applications; and open and closed-loop feedback systems.

ELE 235 Programmable Controllers 2:1½:1½:0

Intended to teach the student to use a programmable logic controller. The student will develop ladder diagram solutions for specific applications and produce a corresponding programmable controller program. A programmable controller will be used to verify the solution.

ELE 250 Commercial and Industrial Wiring 3:3:0:0

Prerequisite(s): HAC 160 or permission of instructor

Provides the student understanding and experience in the layout and construction of electrical circuits as they relate to commercial and industrial installations. Builds upon the knowledge and experience the student gained from the Residential Wiring course (HAC 160). Topics for consideration include electrical safety; commercial and industrial blueprint reading; feeder bus systems; signaling systems; site lighting; panel board selection and installation; and conduit bending.

ELE 255 Telecommunications 3:3:0:0**Prerequisite(s):** ELE 130, 210

This course is the study of the methods used to transmit and receive information electronically, over a distance. Various analog and digital modulation and coding schemes, utilizing a variety of transition methods, will be examined and analyzed. Information capacity, bandwidth, error rate, transmission reliability, advantages, and disadvantages will be studied for each of the telecommunications schemes. Topics covered include telecommunications methods currently in use for audio, video, and data transmission. The course will give the student a broad background in telecommunication circuits.

ELE 275 Integrated Circuits 4:3:3:0**Prerequisite(s):** ELE 130, 210

This course is a study of linear and digital integrated circuits. The operational amplifier is studied in a variety of applications. The student will be introduced to a wide variety of integrated circuits and will use a number of these circuits in the laboratory.

Engineering**EGR 101 Engineering Graphics 4:3:3:0**

Introduces the language of industry. Develops basic drafting techniques and an understanding of industrial-type drawings. Topics covered include orthographic and pictorial drawing, dimensioning, fasteners, machine components, pattern development, and drafting standards. Additional areas of study include various layouts, graphs, displacement diagrams, and descriptive geometry as they relate to the previously mentioned topics.

EGR 102 Engineering Orientation 1:1:0:0

Explains the nature and role of the engineer in an industrial society and the functions and requirements of the various branches of the profession. Considers four- and five-year engineering curriculums and transfer issues.

EGR 213 Statics 3:3:0:0**Prerequisite(s):** MAT 196; PHY 210

A Calculus-based introduction to the mechanics of bodies in equilibrium for engineering students. Topics include position and force vectors, equilibrium of a particle, moments, equilibrium of a rigid body, analysis of trusses and frames, friction, center of gravity and centroid, moments of inertia, and principle of virtual work.

EGR 214 Dynamics 3:3:0:0**Prerequisite(s):** MAT 201; EGR 213

A Calculus-based study of kinematics and dynamics of bodies for engineering students. Topics include kinematics of a particle; rectilinear and curvilinear motion; dynamics of a particle; Newton's second law; work and energy; impulse and momentum; collisions; planar kinematics; and dynamics of a rigid body.

English**ENG 099 Basic Skills Writing 3:3:0:0****Prerequisite(s):** LCCC English Placement Testing score of <40

Provides instruction on essential writing skills. Intensive work on vocabulary development, sentence structure, punctuation, syntax, and proofreading skills helps eliminate technical errors and improve sentence and paragraph writing techniques. Varied writing exercises help students to develop the skills necessary to write well-developed paragraphs.

ENG 100 Fundamentals of Writing 3:3:0:0**Prerequisite(s):** Release from ENG 099 or LCCC English Placement Testing score of 40 to 56

ENG 100 is designed as a preparatory course for students who are deficient in the writing skills that are necessary for successful participation in ENG 105. These skills include the abilities to use the computer to write and revise drafts, to revise independently, to identify weaknesses and strengths, and to organize a 500-word essay. An intensive exploration of the writing process, ENG 100 emphasizes prewriting, revising multiple drafts, and editing final drafts. The essays written in ENG 100 are evaluated for content and mechanics.

ENG 105 Research and Composition 3:3:0:0**Prerequisite(s):** ENG 099 and/or ENG 100 or a LCCC English Placement Testing score of 57

The ENG 105 course has undergone a major change in the expectations and standards of each writing assignment. Whereas the former course required only one major composition that included research skills and the incorporation of direct quotation and paraphrase into student writing, the new course allows for more practice of research and documentation skills by including some level of research in each mandatory writing assignment.

ENG 106 Introduction to Literature 3:3:0:0**Prerequisite(s):** ENG 105

Literature is creative, imaginative verbal art. This course introduces literature and literary studies. Through a survey of literature depicting a wide range of human experience, it introduces concepts useful for analyzing and interpreting fiction, poetry, and drama. It considers relevant, credible resources as it examines relationships between literary significance and social position, inequality, cultural contexts, and political power.

ENG 107 Writing in the Workplace 3:3:0:0**Prerequisite(s):** ENG 105

Presents fundamental concepts of writing and develops writing skills for real-world contexts such as higher education, community involvement, civic engagement and the workplace. Reading assignments emphasize analysis of reports and documents for effective communication models. Writing assignments emphasize writing reports, letters, memos, emails, job application materials and social media. Coursework may include oral reporting.

ENG 108 Creative Nonfiction 3:3:0:0**Prerequisite(s):** ENG 105

Focuses on the composition of creative nonfiction in several rhetorical modes (portrait, reportage, review, epistle, memoir, humor, lecture, and valediction) to develop voice and master grammar and mechanics. Students' analytical skills and creativity are enhanced through the study of good models of writing by professionals from a variety of fields.

ENG 111 Speech 3:3:0:0**Prerequisite(s):** ENG 100, LCCC English Placement Testing score of 57, or release from ESL 251

This course is designed to develop students' speechwriting and presentation abilities while increasing self-confidence and interpersonal skills appropriate in academic, workplace, and community settings. It addresses basic theories of public speaking but emphasizes practice through several types of speaking situations: formal, informal, mediated, and impromptu. Students learn how to assess diverse audiences and how to prepare an effective presentation employing outlines, research, visual aids, and technology. In addition, students develop critical listening and analysis skills while completing self and peer reviews and critiquing renowned speakers' performances. Students also examine speaking rights and ethical responsibilities through written reactions and reflections.

ENG 154 Introduction to Women's Studies 3:3:0:0**Prerequisite(s):** ENG 105**Corequisite(s):** ENG 106

This interdisciplinary and multidisciplinary course is a preliminary exploration of the ever burgeoning literature of Women's Studies. It exposes students to recent discussions about the origins of present attitudes about women in Western society; critical analysis of the situation of women in patriarchal cultures; and efforts by women to achieve self-defined female identity. Drawing on materials from literature, history, religion, biology, psychology, feminist analysis, anthropology, and sociology, the course will investigate cultural beliefs about women's "nature" and role at different times and places; various attempts to explain the origins and persistence of female subordination; and women's efforts to define a new identity through political and creative activity.

ENG 201 World Literature I 3:3:0:0**Prerequisite(s):** ENG 105, 106

The analysis of significant international literature from its origins through the Renaissance consolidates thinking, reading, and writing skills. Intensive reading of specific masterpieces enables the student to better appreciate and evaluate major literary and philosophical movements from pre-Christian times to the Renaissance. Lectures and student discussions will examine human thought of the past and its relation to the present.

ENG 202 World Literature II 3:3:0:0**Prerequisite(s):** ENG 105, 106

Surveys significant works of major international authors from the neoclassical era through the present to enable students to better understand and appreciate major literary works and to enhance students' thinking, reading, and writing skills. Emphasis on the study of dramas and novels of significant writers and the movements such as Neoclassicism, Romanticism, Realism, and Existentialism in which these works were produced.

ENG 205 American Literature I 3:3:0:0**Prerequisite(s):** ENG 105, 106

Introduces works of American literature from the pre-colonial period to the Civil War era. Readings will develop insight into American history, culture, politics and literary trends. It examines the influence of philosophical, religious, psychological, and sociological ideas on American writers and society.

ENG 206 American Literature II 3:3:0:0**Prerequisite(s):** ENG 105, 106

Introduces works of American literature from the post-Civil War era to post-World War II era. It examines the influence of philosophical, religious, psychological, and sociological ideas on American writers and society. Readings will develop insight into American history, culture, politics, and literary trends.

ENG 210 British Literature I 3:3:0:0**Prerequisite(s):** ENG 105, 106

Analyzes works of significant literary and intellectual movements from Anglo-Saxon times to neoclassicism to cultivate an appreciation of British literature and to develop thinking, reading, and writing skills.

ENG 211 British Literature II 3:3:0:0**Prerequisite(s):** ENG 105, 106

Analyzes works of major British writers from the Romantic period to the present, emphasizing works of significant literary and intellectual movements to develop an appreciation of literature as well as to develop thinking, reading, and writing skills.

ENG 215 Introduction to Poetry 3:3:0:0**Prerequisite(s):** ENG 105, 106

Analysis and study of individual poems concentrating on short and medium-length poems. Emphasis on understanding and appreciating poetry as a significant experience for the reader rather than on critical theory and background. Poetry of the English language is the central content of the course; however, poetry of other languages in translation is included.

ENG 220 Introduction to Drama 3:3:0:0**Prerequisite(s):** ENG 105, 106

A study of literature for students more interested in the special genre of drama than in a historical survey of all literary forms. Introduces dramatic literature from its origins to the present.

ENG 225 Journalism 3:3:0:0**Prerequisite(s):** ENG 105

Accents news writing for newspapers, radio, and television. Students become acquainted with the "newspaper" style of writing by learning to write stories based on accumulated facts; articles such as hard news, profiles, features, editorials and reviews will be written. Limited typing skill is a course prerequisite since an attempt is made to simulate the operation of a newsroom. An overview of the responsibilities of the reporter and the mass media is included, as well as various stages of production and layout.

ENG 227 Literature and Film 3:3:0:0**Prerequisite(s):** ENG 105, 106

Through narratology, an interdisciplinary study of the structures of stories and of the relationships between stories and human beings, this course introduces students to the complex relationships between two related but unique storytelling forms: literature and film. The course emphasizes study of the theoretical natures of literature and film; of relationships between literature and film; of debates about which form more satisfyingly presents or reflects human experiences and human conditions; and of the creative processes people use to produce literature and film. Students will acquire and employ the technical vocabulary necessary for discussing and writing critically about literature and film.

ENG 230 Contemporary Fiction 3:3:0:0**Prerequisite(s):** ENG 105, 106

Introduces students to readings published since the end of World War II, with an emphasis on short stories, novels, and plays written by prominent American and international authors during the 1970s, '80s, and '90s. In particular, the course explores the relationship between art and parallel social, cultural, religious, and political events shaping contemporary life. In readings, discussions, and lectures, students will discover writers who experiment with literary forms to challenge depictions of the human condition.

ENG 232 Women's Literature 3:3:0:0**Prerequisite(s):** ENG 105, 106

Focuses on the rich and varied tradition of writing by women. Explores the traditional genres as well as nontraditional genres (journals, memoirs, letters, and speeches) in which women have written over the centuries. Readings emphasize the historical roots from which women's writing grew and explore the thematic range of women's literary heritage.

ENG 235 Creative Writing 3:3:0:0**Prerequisite(s):** ENG 105, 106

An opportunity for students to express their ideas in various creative modes. To stimulate creativity in thinking and writing, the course allows for close student-instructor examination and evaluation of student creations.

ENG 237 Science Fiction 3:3:0:0**Prerequisite(s):** ENG 105, 106

Focuses on science fiction and imaginative literature. Significant eras in the history of the genre will be studied using representative key novels and short stories. Assigned readings will be supplemented with films, music, and other relevant media.

ENG 238 Gothic and Horror Literature 3:3:0:0**Prerequisite(s):** ENG 105, 106

From Medieval cathedrals to online vampire chat groups, the Gothic has provided a major theme in literature and Western culture. Examines manifestations of the Gothic since the Middle Ages and concentrates on the emergence of the literature of the supernatural as exemplified by such writers as Mary Shelley, Bram Stoker, H.P. Lovecraft, and Anne Rice. Subjects studied will include Medieval folk ballads, the Frankenstein myth, vampirism, and other topics relevant to the Gothic literary tradition. The course touches on related subjects, such as Gothic architecture, pre-Raphaelite painting, eschatology, and Goth rock.

ENG 241 Literary Magazine Practicum 3:1½:0:120

Students will focus on the history, context, and significance of the literary magazine. Concurrent with a study of literary magazine volumes past and present, students will promote the college's magazine, solicit student submissions, oversee editorial review, guide the selection of works for publication, edit manuscripts, layout and design the magazine, work with other student groups and college staff to release and publicize the issue, and plan the event of its reading. The students will serve as managing editors of the magazine and be responsible for its publication under the guidance of the instructor.

English as a Second Language**ESL 091 Basic Structure of Written English 3:3:0:0**

Designed for non-native students with beginning English language abilities. The course builds on the student's basic knowledge of English grammar and sentence construction. More advanced language structures and verb forms are presented with emphasis on writing clear sentences and coherent paragraphs.

ESL 092 Intermediate Structure and Composition 3:3:0:0**Prerequisite(s):** ESL 091 or equivalent

Designed for non-native students with intermediate English language skills who display typical second-language writing errors. Use of advanced grammatical structures, verb tenses, and usage are taught. Emphasis is on refining student's writing, developing more precise expression of ideas, and introducing students to the academic essay organization.

ESL 094 Speaking Clearly in English 3:3:0:0

Designed for non-native students with marginal verbal skills in English. Listening skills are practiced through note taking, dictation, and aural comprehension exercises during class. Oral presentations and group discussions provide opportunities for students to express opinions and ideas. Emphasis is on developing fluency and confidence.

ESL 095 Speaking Effectively in English 3:3:0:0**Prerequisite(s):** ESL 094 or equivalent

Academic speaking course designed for non-native students with proficient verbal skills in English. Listening comprehension, note taking, and aural comprehension experiences are practiced during class to prepare students to understand classroom lectures. Students practice conversational skills through oral presentations and problem-solving discussions in which they must present and substantiate their opinions. Emphasis is on verbal responses that are grammatically correct and appropriate for academic situations.

ESL 096 Accent Reduction 3:3:0:0**Prerequisite(s):** ESL 095 or department approval based on an oral interview

Improves pronunciation of non-native speakers of English who want to speak American English more clearly, fluently, and comprehensibly for educational, professional, or social purposes. Instruction in principles of stress, rhythm, and intonation of North American English and on production of individual consonant and vowel sounds. An individualized improvement plan is developed for students based on diagnosis of specific problems. Students receive oral and written feedback on tapes throughout course.

ESL 097 Skills for Effective Reading 3:3:0:0

Designed for non-native students with beginning reading ability and a general English vocabulary. Emphasis is on expansion of academic vocabulary and development of more advanced reading comprehension skills. Word decoding, determining meaning from context, understanding main idea, and identifying supporting details are some of the reading skills presented during class. Students apply these skills to a variety of text based on independent reading assignments.

ESL 098 Intensive Reading in English 3:3:0:0

Prerequisite(s): ESL 097 or equivalent

Designed for non-native students with proficient reading ability and a substantial English vocabulary. Emphasis is on analysis of more difficult reading passages in content areas of study and on development of a solid academic vocabulary. Drawing conclusions, making inferences, and determining organization are some of the more advanced reading skills taught in this course.

ESL 251 English For Academic Purpose 6:6:0:0

Prerequisite(s): ESL 092, ESL 098, or equivalent

Prepares advanced English as a Second Language (ESL) students for the academic reading and writing tasks they will face in an academic setting or on the job.

This class is for ESL students who have successfully completed ESL 115 and 116 but are not yet prepared for English 105 or the reading/writing demands of content courses. In this integrated multi-skills course, ESL students continue to develop their ability to read and write critically across the disciplines while refining and reinforcing the grammatical, structural, and rhetorical patterns of English. Emphasizes both the process and the product and attempts to achieve a balance between form and content as well as fluency and accuracy.

Exercise Science**EXS 101 Introduction to Exercise Science 3:3:0:0**

This course will provide a basic overview of the field of exercise science and associated professions which include: exercise physiology, sports nutrition, biomechanics, athletic training, exercise and sport psychology, and motor behavior. This course will also cover the professional activities such as professional organizations, certifications, professional issues, and professional liabilities that are related to these professional applications.

EXS 102 Exercise Measurement and Prescription 3:3:0:0

Prerequisite(s): MAT100 and ENG 105 or a LCCC English Placement Testing score of 57

Corequisite(s): BIO 164

Teaches the student how to evaluate and prescribe exercise to a variable population. The course covers aspects of health-related physical fitness components (cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition) and how to assess each of these components. The course also covers liability, certifications, and safety procedures that are relevant to the fitness industry.

EXS 103 Methods of Instruction & Personal Training 3:3:0:0

Prerequisite(s): EXS 102 and BIO 164 (grade of C or better)

This course introduces methods of group exercise instruction and the science/art of personal fitness training. The course presents research-based information on a variety of group exercise modalities, as well as effective methods and strategies for an individualized personal training program. Special emphasis is on the planning of group exercise classes and on providing students with opportunities to teach and/or lead group exercise classes. In addition, all facets of personal exercise training are examined; specifically individualized program design and instruction.

EXS 104 Exercise for Special Populations 3:3:0:0

Prerequisite(s): EXS 102 and BIO 164 (grade of C or better)

This course examines the physical state of people with special concerns relating to physical fitness as well as the proper exercise testing and prescription methods for special populations. The focus of the class is on metabolic disorders such as obesity, diabetes, and hypertension as well as coronary artery disease, stroke, osteoporosis, and physically challenged individuals. The course also examines the geriatric population as well as children.

EXS 105 Kinesiology 3:3:0:0

Prerequisite(s): BIO 163 (grade of C or better)

This course introduces the student to the fundamentals of kinesiology. The course covers the anatomical and mechanical fundamentals of human motion. The course allows the student the opportunity to learn a systematic approach to the analysis of human motion. The course also provides the types of experiences that ask the student to apply anatomical and mechanical analysis to the learning and improvement of a broad spectrum of movement activities.

EXS 106 Exercise Physiology 3:3:0:0

Prerequisite(s): EXS 102 and BIO 164 (grade of C or better)

Studies the human response to exercise and adaptations of the body. Topics related to neuromuscular, metabolic, circulatory, and respiratory physiology will be investigated. Concepts presented will cover both theoretical and practical applications to exercise and training principles. Health-related fitness and developmental considerations will be addressed.

EXS 107 Care and Prevention of Athletic Injuries 3:3:0:0

The study of the treatment and prevention of specific sport injuries resulting from activities in the home, recreational, intramural, and extramural settings. Topics include identification of injuries, proper treatment after they occur, and preventative measures. Students will learn how to create a safe environment for athletes. American Red Cross techniques will be covered.

French

FRN 105 College French I 3:3:0:0

This course is offered to beginners and to some nonbeginners who have had perhaps one year of French in high school, but who feel that their preparation is inadequate for an intermediate course at the college level. The basic communication skills are systematically developed: listening and speaking skills are emphasized in the classroom and expanded with participation in a language tape program. Reading and writing skills are progressively developed through various creative exercises, activities, and assignments. Cultural readings and materials are adapted to provide the student with the opportunity to practice communication skills, while at the same time discovering aspects of both daily life and traditional culture of Francophones all over the world and within the United States.

FRN 106 College French II 3:3:0:0

Prerequisite(s): FRN 105 or equivalent and permission of instructor

A continuation of College French I, this course will continue to develop the basic communicative skills for beginning students of French. Emphasis will be placed again on enabling the student to develop proficiency in the basic skills essential to communicative language learning: listening, speaking, reading, and writing in French as well as gaining familiarity with French culture abroad and in North America.

FRN 205 College French III 3:3:0:0

Prerequisite(s): FRN 106 or two years of French in high school or permission of instructor

A continuation of FRN 205, this course provides review and further study of French grammar and vocabulary. Students are immersed in French language and culture, and given opportunities to apply listening and speaking skills to a variety of contexts. Reading strategies are emphasized and fundamentals of composition are presented in conjunction with appropriate literary texts.

FRN 206 College French IV 3:3:0:0

Prerequisite(s): FRN 205 or three years of French in high school or permission of instructor

A continuation of FRN 205, this course provides extensive practice in speaking, listening, reading, and writing skills. Fluency is developed through thoroughly expanded grammatical concepts and idiomatic expressions. Effective skills for understanding and interpreting more advanced literary texts are presented. Students will study the culture of French speakers all over the world.

Geographic Information System

GIS 105 Introduction to Geospatial Technology 3:3:0:0

This course will introduce the student to Geospatial Technology. This includes jobs, tools, data, and applications. Students will have hands-on projects to complete to reinforce learning.

GIS 110 Introduction to Smart Mapping (GIS) 3:3:0:0

This course deals with the use of computer mapping and database in multiple applications. This course supports incorporation of imagery and data into a geographic oriented database system, and provides insights into different GIS techniques, approaches, and applications. Topics covered include data structures, basic functions, methods of data capture, sources of data, as well as the nature and source of spatial data and objects. An introduction to spatial analysis using Geographic Information Systems applications. Videos and hands-on lab will help student do analysis by location, content, proximity and intersection. Students will learn to aggregate data geographically. Note: Basic computer skills are needed for success in this course.

GIS 115 Intermediate Geographic Information Systems 3:3:0:0

Prerequisite(s): GIS 110

This course deals with the use of computer mapping and database in multiple applications. This course supports incorporation of imagery and data into a geographic oriented database system, and provides insights into different GIS techniques, approaches, and applications. Topics covered include data structures, basic functions, methods of data capture, sources of data, as well as the nature and source of spatial data and objects. This course provides more in-depth information on spatial analysis using Geographic Information Systems applications. Videos and hands-on labs will help the student do analysis by location, content, proximity and intersection. Students will learn to aggregate data geographically. Note: Basic computer skills are needed for success in this course.

GIS 120 Geographic Information Systems (GIS) in Homeland Security 3:3:0:0

Prerequisite(s): GIS 115 or working knowledge of ArcGIS

This course directs the student through the five stages of a Homeland Security plan. It walks you through step by step with the data, software tools and strategy to create your communities' Homeland Security plan. The maps you create show you how to apply Geospatial tools and thinking to this common problem. The five stages illustrated are; Risk Assessment, Mitigation, Preparedness, Response and Recovery.

GIS 125 Geographic Information Systems (GIS) in Law Enforcement 3:3:0:0

Prerequisite(s): Working knowledge of ArcGIS

This course will empower law enforcement personnel to view and analyze pertinent information critical to the safety and well being of a community or region through the use of maps and spatial analysis techniques. Geospatial data relevant to law enforcement and crime analysis are: political and administrative boundaries, natural and manmade landscape features, population demographics, policing features, and calls for service (CFS) locations.

GIS 130 Geographic Information Systems (GIS) in Economic Development 3:3:0:0

Prerequisite(s): Working knowledge of ArcGIS
The use of Geographic Information Systems (GIS) empowers economic developers to view and analyze pertinent information critical to the growth and development of a community or region. This course enables the visualization and study of these community factors through the use of maps and spatial analysis techniques.

GIS 135 Geographic Information Systems (GIS) in Stem Fields 3:3:0:0

What is Geospatial Technology and how does it apply to Agriculture, Food, Natural Resources, and Science, Technology, Engineering, and Mathematics (STEM)? Where are the jobs in these industry? How well do they pay? How can I use Geospatial Technology on my farm? Future opportunities in the geospatial industry specifically focused on the STEM Career path as applied to the quickly growing Environmental and Green Technologies. These lessons contain overviews of career profiles, which provide examples of industries and individuals that use this technology. Why is knowing about Geospatial Technology becoming so important?

GIS 210 Intermediate Geographic Information Systems 2 3:3:0:0

Prerequisite(s): GIS 115
A continuation of GIS 115, this course deals with the use of computer mapping and database in multiple applications. This course supports incorporation of imagery and data into a geographic oriented database system, and provides insights into different GIS techniques, approaches, and applications. Topics covered include data structures, basic functions, methods of data capture, sources of data, as well as the nature and source of spatial data and objects.

This course provides more in-depth information on spatial analysis using Geographic Information Systems applications. Videos and hands-on labs will help the student do analysis by location, content, proximity and intersection. Students will learn to aggregate data geographically. Note: Basic computer skills are needed for success in this course.

GIS 215 Remote Sensing and Advanced Applications GIS 3:3:0:0

Prerequisite(s): GIS 210
This course introduces remote sensing by surveying a wide range of applications. Students will analyze remote sensing data and learn to make as to support spatial decisions. The exercises present an opportunity to develop critical-thinking prowess. This course is concerned with ways GIS can be used to analyze, integrate and communicate geographic information.

GIS 220 Capstone for Geospatial Technology 3:3:0:0

Prerequisite(s): Successful completion of sufficient geospatial technology courses or permission from the instructor.

The capstone is a learning experience resulting in a consolidation of a student's educational experience and certifies mastery of entry level workplace geospatial competencies. The capstone experience should occur during the last semester of the student's educational program. Methods of providing a capstone experience include: a final learning experience that allows a student to apply broad knowledge of the discipline; a course involving simulation of the workplace, case studies, portfolios, and employment scenarios; a summative project involving the integration of the student performing activities to simulate the situations which may occur in the workplace. Students will learn how to compile, analyze, and present geospatial data while emphasizing the value of visual communication. Student may combine this course with an internship and use the internship as the workplace.

GIS 280 GIS Internship 3:3:0:0

Prerequisite(s): Completion of all other coursework for this program

The student will work in a supervised internship in the community. The work assignment is selected according to the student's career goals. Students should apply for this learning experience through the appropriate faculty member at least six weeks prior to the end of the semester proceeding the work period. The work period will be a minimum of 150 hours.

Geography

GEO 110 Cultural Geography 3:3:0:0

The course is organized to present a view of the scope of cultural geography. The unifying philosophical question highlights the interactions between physical and cultural factors on Planet Earth. Ideally, the student will be aided in developing a better appreciation of the complex reasons for cultural diversity, cultural conflict, and observed differences in levels of economic development. Emphasis is given to an understanding of the holistic approach in solving problems facing the human race and its interaction with the environment.

GEO 115 World Regional Geography 3:3:0:0

The course is an introduction to the location, distribution, and spatial organization of major realms, regions, and countries of the world. Emphasis will be placed on physical features, cultural patterns, political histories, economic development, and how increasing globalization influences the geographic areas of the world. Current geographic issues associated with each area will be addressed. Utilizing the holistic approach of geography, students will be able to better explain the "why" and "where" of the peoples and places of the world.

**GEO 260 Independent Study –
Geography****1–3:1–3:0:0**

Prerequisite(s): Introductory course in the subject area, minimum GPA of 3.0 in the course subject to be studied, and overall GPA of 3.0, or sufficient evidence of academic strength, and written permission of the instructor and academic dean to justify the independent study.

Reading, research, and/or experimentation on topic (not otherwise covered in college social sciences curriculum) selected in consultation with a faculty member. Special attention is to be given to the particular abilities and interest of students, with individual guidance for advanced studies. The student may choose: research on selected problems, supervised field studies, reading program, among other alternatives. The course may be a group of students as well as individual study. The course may be repeated for credit. The student is responsible to adhere to the college policies and procedures for independent study.

German**GRM 101 Spoken German for
Travelers****3:3:0:0**

Basic conversational German for beginners who have little or no formal knowledge of the language. Lessons on grammar and usage are taught only as they affect everyday conversation, and the course emphasis is on real-life situations. The course also introduces students to the cultural life of German-speaking countries, and will include useful information about Germany, Austria, and Switzerland. Students will practice dialogues they may encounter in traveling to Germany.

GRM 105 College German I**3:3:0:0**

An introduction to the German language with emphasis on speaking, reading, writing, and understanding. Focus will be on grammar, usage, vocabulary, pronunciation, and comprehension. The course includes a tape program component. The course is designed for students who are beginning their study of German, or for those who have had one year or less of German in high school.

GRM 106 College German II**3:3:0:0**

Prerequisite(s): GRM 105

A continuation of College German I, the course will emphasize speaking, reading, writing, and comprehension of the language. Focus will be on grammar, usage, vocabulary, comprehension, and pronunciation.

GRM 205 College German III**3:3:0:0**

Prerequisite(s): GRM 106 or two years of German in high school or permission of instructor

A continuation of College German II, this course further develops basic skills in aural comprehension, speaking, reading, and writing. Basic grammatical concepts will be reviewed, and more complex grammatical concepts will be introduced. Emphasis will be placed on acquiring oral and written fluency through classroom exercises and assignments.

GRM 206 College German IV**3:3:0:0**

Prerequisite(s): GRM 205 or three years of German in high school or permission of instructor

A continuation of College German III, this course further develops oral and written fluency in the German language through lecture presentations on grammar and idiomatic expressions, cultural and literary reading selections, and oral and written classroom exercises and assignments.

Health**HPE 101 Personal and
Community Health****2:2:0:0**

Presentation of and investigation into healthful practices. Students will study body functions and evaluate lifestyles as they influence their emotional and physical development.

**HPE 106 CPR for Professional Rescuers
and First Aid****2:2:0:0**

Presents principles and applications of first aid and safety so that students can correctly respond to medical emergencies. Successful completion of this course offers the student an opportunity for certification in American Red Cross First Aid and CPR for the Professional Rescuer. A \$6 fee is charged by the American Red Cross for certification.

Health Information Technology**HIT 110 Introduction to Health
Information Science****3:3:1:0**

An introduction to the medical or health record, this course provides a basic understanding of the development, content, format, and control of medical records. The course provides an orientation to health delivery systems as well as legal and ethical aspects of federal, state, and local agencies. The course also introduces the student to the system of healthcare reimbursement and the function of the medical records department and the medical record in reimbursement.

HIT 120 Medical Terminology**3:3:0:0**

Reviews the systems of the human anatomy and certain medical specialties, concentrating on the medical terms and their component parts to give the student a working knowledge of medical terminology. Students will be able to build, define, pronounce, and demonstrate a working knowledge of the terms used in today's healthcare fields.

**HIT 130 Health Information in
Alternative Settings****4:4:0:0**

Introduces the student to health information in settings other than the acute care facility. Emphasis will be not only on the content of health information used in alternative settings but also on the dissemination, subsequent use, and linkage of the information. The areas covered will include long-term care, psychiatric facilities, home health, rehabilitation, tumor registry, and other specialty settings.

HIT 140 Health Law 3:3:0:0
Introduces the student to confidentiality of medical record information, specialized release of information procedures, healthcare legislation, and concepts of liability in the healthcare field. There will be a general introduction to the American government and court systems. In addition, risk management in healthcare will be covered.

HIT 150 Clinical Documentation Improvement 3:3:1:0

Prerequisite(s): HIT 110

This course addresses the principles of Clinical Documentation Improvement and process. The emphasis is on information integrity and data quality as it relates to diagnosis and procedural documentation specificity for coding, effective query communication, revenue cycle reimbursement and compliance and regulatory requirements. Review of data benchmarking and trending will also be incorporated.

HIT 200 Health Information Processing 3:3:1:0

Prerequisite(s): HIT 110, 130

This course will introduce the HIT student to the concepts of data entry, data display, report generation data abstracting and the use of data in health care facilities and the role of the HIM manager in this process.

HIT 210 Health Information Reporting 3:3:1:0

Prerequisite(s): HIT 110, 120

Introduces the student to general healthcare statistics and vital statistics as well as the state and federal laws governing the collecting of those statistics. Students will be exposed to health statistics reporting, display of information, and presentation of results. In addition, there will be an introduction to quality assurance and utilization review in the acute care facility as two of the utilizers and generators of health data in the acute care facility. A laboratory session will be held each meeting to apply concepts as they are reviewed.

HIT 220 Health Information Management Practicum 3:3:1:0

Prerequisite(s): HIT 110

This course is a practical application of the medical record technician as a manager and supervisor in the medical record department and other health care settings. Future managerial and supervisory roles in health care organizations will be stressed. A supervisory position is the most critical point in an entire organizational structure as it involves management of day-to-day activities of a department. Thus, the course will be focused on the supervisor's job of getting things done with and through people—the basic foundation in the relationship between supervisors and employees.

HIT 230 Professional Practice Experience 4:2:6:0

Prerequisite(s): HIT 110, 120, 140, 210 and 255

This course is completed via AHIMA's Virtual Lab as directed by the HIT program faculty to simulate an acute care hospital's HIM department. The student will participate in the various functions found in such a department and will have hands-on experience with these functions. They should include: data abstracting, data processing and entry, medical record assembly and review, use of computerized software systems seen in healthcare settings, coding of medical diagnoses and procedures. Various assignments and projects will be assigned by the instructor to give the student hands-on experience with various hospital and healthcare-based systems.

HIT 240 Advanced Medical Terminology & Pathophysiology 3:3:0:0

Prerequisite(s): BIO 163, 164

This course builds upon the knowledge base learned in Medical Terminology and expands the student's understanding of medical terms, disease processes and pathophysiology, clinical diagnostic studies, pharmacology and other terms used in healthcare settings. This course is designed for the healthcare coding student as well as workers in various positions in healthcare settings who wish to expand their understanding of medical terminology and clinical knowledge base. It will delve into much greater depth in the areas of disease etiology, current treatment modalities and the classification, application and use of medications than the prerequisite course Medical Terminology.

HIT 250 ICD-10 CM/PCS Coding and Classification System 3:3:0:0

Prerequisite(s): BIO 163, HIT 110, 120

Reviews the ICD-10 coding and classification systems used in the healthcare setting. Students will learn basic skills and apply their knowledge by coding actual medical records, as well as coding the workbook problems. Students will also be exposed to a computer system used in many hospitals that code and abstract patient data.

HIT 255 CPT and Other Classification Systems 3:3:1:0

Prerequisite(s): HIT 110, BIO 163, BIO 164

Designed to train health information technology students in the art of CPT coding as well as familiarize them with other nomenclature and classification systems. Computerized tumor registry is also reviewed and applied.

HIT 260 Advanced Coding Concepts 3:3:1:0

Prerequisite(s): HIT 250, 255 or permission of instructor

Designed to build upon the health information technology student's basic knowledge of coding of diagnoses and procedures by exploring the varied concepts for coding of complicated body systems, intricate reimbursement and systems, and advanced coding concepts seen in the healthcare industry today.

Heating, Air Conditioning, and Refrigeration (HVACR) Technology

HAC 104 Basic Electricity 3:3:0:0

A series of lectures and lab experiences designed to familiarize the beginning technician with the electrical principles as they relate to alternating and direct current, the operation of various types of circuits, and basic wiring diagram (schematic) reading and drawing. Other topics for consideration include concepts and principles of generating and distributing electricity and electrical circuitry, electrical safety, basic circuit characteristics, Ohm's Law, and Watt's Law.

HAC 119 Construction Print Reading 3:3:0:0

An introduction to the basic principles used by architects and draftsmen to make architectural and structural drawings. It is designed for the student who desires a basic knowledge of blueprint reading and construction knowledge, as well as those who will enter the construction, electrical, or HVAC fields. Topics will include views, scales, symbols, projection, footings and foundations, notations, and elevations. Structural and trade-specific information used in residential and light commercial building construction will be used to solve possible problems that may be encountered.

HAC 125 Piping and Hydronic Heating 3:3:0:0

Prerequisite(s): HAC 119 or permission of instructor
Provides the student with the background and skills to perform various piping operations pertinent to the heating field. Topics to be covered include basic and specialty tools used for copper, black iron, copper-finned baseboard, and steam radiation. Piping layout, hydronic heating systems sizing, zoning, hot water and steam boiler piping, hydronic controls, and radiant heat layouts will be covered.

HAC 131 Air Conditioning and Refrigeration I 3:3:0:0

Prerequisite(s): HAC 104 or permission of instructor
Will introduce the student to the theory and application of the basic refrigeration cycle as it applies to comfort air conditioning equipment. This is the first of four air conditioning courses and will cover air conditioning applications, including installation and service of window air conditioners, split system residential air conditioners, packaged air conditioning units, and light commercial systems. The student will be introduced to the refrigerants presently in use as well as alternative refrigerants and refrigerant oils.

HAC 132 Air Conditioning and Refrigeration II 3:3:0:0

Prerequisite(s): HAC 131 or permission of instructor
Discusses the theory and application of the basic refrigeration cycle as it applies to refrigeration. This is the second of a series of courses dealing with air conditioning and refrigeration, covering refrigeration applications that include installation and service of residential refrigerator and freezers, icemakers, walk-in coolers and freezers, and light commercial systems. The student will be introduced to the specialized components and controls needed for refrigeration systems. Included in this course is a field trip to witness first-hand the operation of supermarket rack and heat-reclaim systems.

HAC 135 Domestic Oil Burners 3:3:0:0

Prerequisite(s): HAC 104 or permission of instructor
Introduces the student to the application and systematic approach to understanding the operation, maintaining, servicing, and installing residential oil burner systems. This course will give students the necessary skills to perform annual maintenance on modern oil burner systems. Included will be discussions on types of fuel oil, high-pressure burners, basic electrical wiring diagrams, electrical components, and combustion testing and start-up procedures. Sizing nozzles, combustion chambers, fuel pumps, piping oil tanks, testing fuel units, and general troubleshooting techniques will be covered.

HAC 140 Electrical Maintenance I 3:3:0:0

Prerequisite(s): HAC 104 or permission of instructor
A continuation of the basic electricity course that is designed to help the student understand electrical circuits as they relate to heating, ventilation, air conditioning, and refrigeration (HVACR) equipment. Topics include safety and operating switches; alternating current circuitry; single- and three-phase transformers and motors; relays, contactors and solenoid switches; control and timer circuits; wiring diagrams and symbols; and open motor and hermetic compressor testing. Electronic controllers used in the HVACR industry will be introduced.

HAC 145 Advanced Air Conditioning and Refrigeration 3:3:0:0

Prerequisite(s): HAC 119, 132, or permission of instructor
Students will study and apply psychometrics and heating, ventilation, and air conditioning (HVAC) system design using manual and computer-based load calculations. HAC 145 deals with application, installation, and maintenance of HVAC equipment in residential, commercial, and light industrial environments. Topics will include heating/cooling load estimating, air distribution and balancing, duct design and fabrication, and psychometric operations.

HAC 150 Heating System 3:3:0:0

Prerequisite(s): HAC 104 or permission of instructor
Studies the various types of heating systems available in this region today. The course is designed to use schematic diagrams to follow the sequence of operations of heating, ventilation, air conditioning, and refrigeration (HVACR) equipment in use today that incorporates state-of-the-art electronic ignition systems and solid-state controls. The operations of oil-fired, gas-fired, electric furnaces, and heat pumps are covered. The subject of human comfort levels is an important component of this unit of study. Heating system evaluation, zoning and hydronic heat, conditions that affect human comfort, and the basic laws of thermodynamics will complete the course of study.

HAC 155 Electrical Maintenance II 3:3:0:0

Prerequisite(s): HAC 140 or permission of instructor
A continuation of Electrical Maintenance I, with single- and three-phase electrical voltage systems, motors, controls, programmable logic control devices, and components. Emphasis will be placed on troubleshooting, maintenance, and repair of three-phase controllers and motors, lighting system problems, and heating, ventilation, air conditioning, and refrigeration (HVACR) equipment. Also covered will be an introduction to electronic devices, HVACR controls, and energy management systems.

HAC 160 Residential Wiring 3:3:0:0

Prerequisite(s): HAC 119 or permission of instructor
Provides the student with the background to apply the National Electrical Code (NEC) as well as instruction into the design and application of residential house wiring. Subject matter examines electrical layouts, installations, testing, and maintenance of electrical circuits, type of wire and wiring devices used for new construction, garage and outdoor lighting, special purpose outlets and connections, reading floor plans as they relate to house wiring, service-entrance requirements, low voltage wiring, wiring heating, ventilation, and air conditioning (HVAC) systems, types of fixtures, and GFCI protection.

HAC 200 Applications, Troubleshooting, and Certifications in HVACR 3:3:0:0

Prerequisite(s): minimum of 75% of curriculum or permission of instructor
A culmination of the study of heating, ventilation, air conditioning, and refrigeration (HVACR), this course will focus on electrical schematic diagram reading, a systematic approach to electrical and mechanical diagnostics and troubleshooting, charging techniques, and customer relations. The student will participate in two of three Industry Competency Exams and successfully complete a minimum of Type II Environmental Protection Agency (EPA) Certification as a requirement for completing this course.

HAC 205 Gas Heat/Heat Pumps 4:4:0:0

Prerequisite(s): HAC 104, 131, 140, 150, or permission of instructor
A two-part course that deals with the complexities of both gas-fired heating systems and heat pumps. Installation, application, and servicing these pieces of equipment is the focus of this course. Gas Heat covers topics ranging from fundamentals of combustion to the evolution high efficiency units. The Heat Pump section covers air-to-air and water-source systems. Both components include start-up procedures and yearly maintenance. The course combines hands-on experiences to complement the technical learning.

HAC 210 HVACR Practicum 2:0:0:150

Prerequisite(s): HAC 104, 119, 131, 132, 140, 150, or permission of instructor
Provides the student the hands-on personal experience in the heating, ventilation, air conditioning, and refrigeration (HVACR) field by working side by side with a working professional from a local company that performs service or installation work. Students will be required to assist the technician during the routines of a typical workday. The instructor must approve internships. Any student who is currently working for a registered HVACR company with a minimum of 500 hours experience will receive credit for this course upon written documentation by the employer.

HAC 250 Commercial and Industrial Wiring 3:3:0:0

Prerequisite(s): HAC 160 or permission of instructor
Provides the student understanding and experience in the layout and construction of electrical circuits as they relate to commercial and industrial installations. Builds upon the knowledge and experience the student gained from the Residential Wiring course (HAC 160). Topics for consideration include electrical safety; commercial and industrial blueprint reading; feeder bus systems; signaling systems; site lighting; panel board selection and installation; and conduit bending.

History**HIS 123 United States to Reconstruction 3:3:0:0**

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94
The study of U.S. history is the study of ourselves as human beings and our connection to the larger world and global historical trends. Such an understanding, explored through events such as the Enlightenment, religious revivalism, the Revolution, reform movements, westward settlement and the Civil War will allow students to develop an insight into the dynamics and reciprocity of the individual and society. Students will ground their insights into human nature and American culture by gaining familiarity with this body of historical knowledge.

HIS 124 United States Since Reconstruction 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94
The present is a result of the past. Apropos, students in this course will consider, analyze and gain insight into past events, people and trends that have contributed to the constitution of America's present. An accumulation of a body of knowledge, both necessary and useful, and including U.S. foreign policy from Western settlement through globalization, and domestic changes from urbanization and industrialization, racial and gender questions to enduring debates over political economy, will serve to supplement and support the intellectual skills on which this course will focus.

HIS 126 History of Black America 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94
Introduces students to the contributions of African Americans. Course materials allow the class to examine the political, economic, social, and psychological experiences of African Americans and their impact on the culture and character of the United States from the early days in the Americas to the present.

HIS 130 Western Civilization I 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94
A thematic-oriented course surveying the origins, development, and formation of the Western world's major political, social, economic, religious, and intellectual institutions to the dawn of the modern era. Special emphasis is given to four great antecedents of Western Civilization: Greek rationalism; Roman universality; Judaic-Christian ethics; and Celtic, Slavic, and Germanic traditions. Western Civilization is defined as European civilization and its remote origins in earlier civilizations located in Mesopotamia, the Nile Valley, and beyond. The course stresses the themes of continuity and change in the forging of and diffusion of Western Civilization. Attention is paid to the reciprocal influences of Western and non-Western cultures. Discussion, lecture, and inquiry methods aim to develop the student's appreciation of the Western historical perspective.

HIS 131 Western Civilization II 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94

Beginning with a review of the foundations of Western civilization, the course stresses the principal ideologies and developments of Western civilization from the dawn of the modern era to the contemporary scene. Special emphasis is placed upon the rise of the state system, the challenge of nationalism and secularism, the industrial revolutions, the rise of nationalism in its varied forms, the challenges of liberalism and its diverse applications, the rapid advance and application of science, and the extent of world conflict. Each of the modern Western world's "isms" is analyzed through its origin, development, and impact upon the West's political, economic, and cultural institutions. Efforts are also made to relate the reciprocal influences between Western and non-Western worlds.

HIS 220 Twentieth Century World History 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94

While it was once possible to understand the rhythms of life over the course of centuries, by the late 19th century this was no longer true. The 20th century wrought truly staggering changes in technology and war, family life, religion, international relations, the relationship of the government and the economy, ideas of equality and fairness. These vast, world altering changes rendered, for the first time in human history, a world that we would be entirely unrecognizable and incomprehensible to humans who lived before. To understand our world in the 21st century, we must learn the precursor of change as the only constant.

HIS 222 Russia and the World 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94

Russia and the World is an analysis of the role of the Russian people and culture in world history. The course reviews the five great periods of Russian history—Kievan, Mongol, Muscovite, Imperial, and Soviet—but emphasis is placed on the Soviet era and the contemporary scene. Students will concentrate on Russia's role in the modern world as a Czarist power, as a Soviet monolith, and as an evolving new state. Attention will also be given to the Russian impact on other states, especially in terms of the Marxist-Leninist influences. A multidisciplinary approach is taken throughout the course.

HIS 224 World War II 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57

The experiences of total commitment to an intercontinental struggle are examined, both in the domestic life of everyday Americans and the battlefield confrontations. Seeks to provide a perspective to 20th century American history by an in-depth examination of this cataclysmic period. Is presented in an interdisciplinary fashion, with emphasis on historic, political, economic, psychological, military, and social implications.

HIS 225 United States History Since 1945 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94

As the period in which the United States emerged as the global leader of the free world, the post-1945 period is the one which most Americans consider to be the natural state of the nation. Considering this period in contrast to the previous 170 years of American history, and again to the contemporary world, students will gain an understanding of the uniqueness of this time in U.S. history. Grounding the macro view of history will be investigations into specific events and people as students gain further insight into the flow and process of the U.S. as a non-static entity.

HIS 260 Independent Study – History 1–3:1–3:0:0

Prerequisite(s): Introductory course in the subject area, minimum GPA of 3.0 in the course subject to be studied, and overall GPA of 3.0, or sufficient evidence of academic strength, and written permission of the instructor and academic dean to justify the independent study.

Reading, research, and/or experimentation on topic (not otherwise covered in college social sciences curriculum) selected in consultation with a faculty member. Special attention is to be given to the particular abilities and interest of students, with individual guidance for advanced studies. The student may choose: research on selected problems, supervised field studies, reading program, among other alternatives. The course may be a group of students as well as individual study. The course may be repeated for credit. The student is responsible to adhere to the college policies and procedures for independent study.

Horticulture**HRT 118 Woody Plants in the Landscape 4:3:3:0**

A survey of woody plant species emphasizing identification, ecological and aesthetic value, and culture of as many as 170 species, including trees, shrubs, and vines. Ecological interactions, such as plant diseases, susceptibility to insect pests, and invasiveness, will be emphasized. Lab requires weekly walks around and near campus to study woody specimens, or may occasionally require class meetings at off-campus sites.

HRT 208 Plant Propagation 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and a LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 100 or LCCC Algebra Placement Testing score of 77

Study of the biology and techniques of both vegetative and sexual plant propagation. Labs emphasize experimentation and practical experience with seed germination, seedling culture, and vegetative propagation methods, including an independent research project.

HRT 231 Entomology 4:3:3:0
Prerequisite(s): BIO 101 or BIO 110
 A general study of insect diversity, classification, anatomy and physiology, and ecology. Special emphasis on the harmful and beneficial activities of insects and on methods of controlling insect populations. Class will require some outdoor study (both during class and independently), including preparation of an insect collection. May occasionally require class meetings at off-campus sites.

HRT 236 Soil Science 4:3:3:0
Prerequisite(s): BIO 110 and CHE 111
 Discussion and examination of the physical, chemical, and biological characteristics of soil, including soil formation, fertility, pH, texture, and water-holding capacity. Soil profiles, erosion, organic matter, soil organisms, and plant nutrition will also be studied.

Hotel Resort Management

HRM 105 Introduction to Hospitality Industry 3:3:0:0
 Introduces the student to the wide range of career possibilities in the hospitality industry. This course, through its design, will help the student develop a better understanding of the various components of the travel/tourism industry, hotel/motel/resort industry, and the recreation and leisure system.

HRM 120 Purchasing for the Hospitality Industry 3:3:0:0
 An introductory study of the purchasing function in the hospitality industry. This course will help the student develop a better understanding of the various components of the purchasing function as it relates to lodging properties, restaurants, institutional foodservice operations, recreational and leisure facilities, and the various segments of the travel and tourism industry.

HRM 130 Hospitality Facilities and Equipment 3:3:0:0
 Presents the student with an overview of planning hospitality facilities. An introduction to the necessary components of design and layout, engineering and maintenance of facilities, and equipment selection will be provided.

HRM 131 Applied Food Service Sanitation 2:2:0:0
 Sanitation and safety procedures and governmental regulations as they apply to the food service industry. Identifies the causes and prevention of foodborne illness. Provides the future hospitality chef/manager with certification in ServSafe Applied Foodservice Sanitation from the Educational Foundation of the National Restaurant Association.

HRM 160 Hospitality Accounting 3:3:0:0
Prerequisite(s): MAT 118
 This course provides students with an introduction to accounting theory and practice related to the distinctive needs of the hospitality industry. It focuses on the unique accounting and operating characteristics utilized in the hospitality industry. Globalization issues linked to hospitality finances are discussed. The Uniform System of Accounts for hospitality-specific industries will be explored as will specialized procedures such as the night audit.

HRM 170 Hospitality Ethics 3:3:0:0
 Introduces students to ethical decision making in the hospitality industry. It includes the major principles and theories related to ethical behavior and how they can be applied to a variety of situations that may arise in hospitality settings.

HRM 201 Event Planning & Catering 3:3:0:0
 This course provides students with an introductory background in planning specialized and catered events such as banquets, weddings, sporting events, and business and industry meetings. Major areas of focus are administration, food and beverage, and operations. Students are introduced to aspects of creativity and design, planning, marketing and staging of the event. Issues concerning negotiations, security, financial control and legal compliance are discussed.

HRM 205 Dining Room Operations 3:3:0:0
 Prepares students for basic management of dining room operations in a variety of foodservice facilities. Students will be introduced to the history of table service, service styles and techniques, and proper dining room staffing and organization. They will become familiar with front-of-the-house menu and food terminology, handling reservations and payments, and special challenges in the operation of front-of-the-house foodservice facilities. Students will be introduced to the use of technology in order taking and processing. Bar and beverage service products and practices along with safe alcohol service techniques will be discussed.

HRM 208 Security and Risk Management 3:3:0:0
 This course prepares students to handle issues of security and risk management in the hospitality workplace. It covers the importance of limiting risk in relationship to the potential financial loss due to legal and natural liability in the industry. It examines a wide variety of security and safety equipment and procedures, crisis communication, guest protection, Occupational Safety and Health Administration (OSHA) regulations that apply to lodging properties, internal security for asset protection, and risk management policy and procedure.

HRM 211 Rooms Division Management 3:3:0:0
Prerequisite(s): HRM 105
 Presents a systematic approach to managing rooms division departments in lodging operations of the hospitality industry. An overview of front office, reservations, property operations, housekeeping and security procedures, operational planning, administration, staffing, and record keeping will be provided. Students will also be provided with an overview of accounting, budgeting, forecasting, teamwork, and financial systems for lodging properties.

HRM 225 Hotel, Restaurant, and Travel Law 3:3:0:0
 A comprehensive study of the laws and sample cases which apply to the hospitality industry. Topics of law covered include legal requirements for hotel/restaurant organization; government regulations; guest/innkeeper relationships; rights and liabilities of innkeepers; and the problems, rights, and liabilities of the travel agent.

HRM 230 Marketing for the Hospitality Industry 3:3:0:0

Prerequisite(s): HRM 105

Provides an introduction to the broad scope of hospitality marketing with emphasis on the analysis, structure, and strategy of the marketing department. Departmental budgeting, allocation of resources, market research, media selection, and effectiveness of marketing plans are also studied.

HRM 235 Hospitality Human Resource Management 3:3:0:0

Introduces the student to the role of the manager in the areas of personnel administration and training in a hospitality environment. Topics will include the formulation of job descriptions, recruiting for the hospitality industry, hiring, training, positive reinforcement, and progressive discipline procedures. Special challenges to the hospitality industry will be addressed.

HRM 250 Hospitality Management Internship 3:1:0:225

Prerequisite(s): HRM 131, six additional credits in HRM, and permission of instructor

Provides the students with hands-on experience in various areas of hospitality management. The student will work a total of 225 hours for three credits. Students may also be required to attend campus meetings or seminars, complete projects, maintain journals, or do other assigned tasks as instructed. The internship must be pre-approved by the faculty member who will evaluate the internship experience.

Human Resource Management

Many courses for the degree or certificate in Human Resource Management are listed under "Business."

Human Services

HUS 110 Introduction to Human Services 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94

This course provides an introductory knowledge of the human services profession. Students will be introduced to the concepts and frameworks that define the human service profession. The historical development and legislative influences of the profession will be explored. The nature of the helping process will be addressed.

An overview of the human service delivery systems and organizations will be reviewed. Professional values, skills, and ethics will be presented. The range and types of populations served by human services will be discussed. Additionally, human service professional roles, ethics, and resources will be introduced.

HUS 115 Introduction to Drug and Alcohol Substance Abuse 3:3:0:0

The course provides introductory knowledge of the structural model of Drug and Alcohol education. Students will be introduced to the historical, biological, cultural, medical, and psychological perspectives of drug and alcohol use, abuse and dependence. The various drug classifications will be discussed along with the physiological, psychological and physical effects of each substance. Etiology, diagnosis, interventions, treatment(s) and prevention of drug and alcohol use/abuse/dependence will be explored. The disease model of addiction as it pertains to children, adolescents and adults of various cultures and diversities will be discussed.

HUS 120 Interviewing and Case Management 3:3:0:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or a LCCC Reading Placement Testing score of 94

A practical course focusing on the knowledge and skills of the helping process. Students will develop the helping skills needed for entry-level workers in human services settings. Emphasis will be on the practical application of interviewing, basic counseling communication, and case management skills. The components of interpersonal communications and interviewing techniques are studied with a particular focus on giving and receiving information in the interview setting. Helping skills for diverse populations will be presented. Professional ethics within the helping process will be explored.

HUS 125 Introduction to Therapeutic Recreation 3:3:0:0

This course will introduce students to the purposes and processes of therapeutic recreation for individuals served by social service agencies. Students will study the development of planning phases; needs assessment, development, scheduling and timing, implementation, adaptation, and evaluation of activities. Current trends and therapeutic recreation research will be explored.

HUS 150 Intellectual and Developmental Disabilities 3:3:0:0

The course will focus on the historical, cultural, medical, and psychological perspectives when helping individuals with developmental disabilities in community settings. Topics on etiology, life stages, interventions and treatments will be explored. Adult transition issues, self-determination and empowerment, and community life will be discussed. Political and legislative influences and ethical issues will be presented.

HUS 160 Introduction to Counseling Skills and Theories 3:3:0:0

Prerequisite(s): A minimum C grade in HUS 110, HUS 120; ENG 105, and PSY 140

Students will further develop basic communication and interventive interviewing skills using a multitheoretical three-stage counseling model. Communication and interpersonal interaction skills are emphasized. Observation, listening, and problem-solving skills will be addressed. Students will learn how to use appropriate communication and interventions with diverse populations. Students will apply basic counseling communication skills within a technology environment. An overview of counseling theories will be presented. Professional ethics will be reviewed. Students will provide 40 hours of basic counseling communication experience. Internet access required.

HUS 170 Systems and Processes 3:3:0:0

Prerequisite(s): Minimum C grade in HUS 110 and HUS 120; ENG 105, SOC 150

Provides an overview of the social welfare organization and delivery systems for analysis and evaluation. An historical and legislative review of the development of human service delivery systems is provided. Emphasis is placed on the analysis of the complex structure of existing systems and service delivery models. Ethical and legal issues will be discussed.

HUS 210 Group Processes 3:3:0:0

Prerequisite(s): Minimum C grade in HUS 160

A practical skills course which focuses on the concepts of group process and the skills in designing and conducting therapeutic groups. An overview of group theory and the application of the theoretical framework in conducting groups will be presented. Students will develop, conduct, and evaluate outcomes of group sessions for a variety of group settings. Group leadership skills and diversity competencies will be developed. Leadership interventions and ethical issues in group settings will be explored.

HUS 215 Professional Seminar 1:1:0:0

Prerequisite(s): Successful completion of all placement tests required 98, 99, and 100 level courses; a minimum C grade in HUS 110, HUS 120, PSY 140, SOC 150, ENG 105

This course serves as a prerequisite class to the internships required in the Human Services A.A.S. program. Students will examine the developmental stages of professional development in an internship, prepare for the use of supervision, develop learning goals for the experience, and discuss the code of ethics and ethical dilemmas involved within the internship experience. Students will develop a professional portfolio, research agencies and interview professionals for potential placement site agencies, and prepare for the contractual obligations required of the community agencies.

HUS 220 Internship I 3½:1:0:0

Prerequisite(s): Successful completion of all placement tests required 98, 99, and 100 level courses; a minimum C grade in HUS 110, HUS 120, HUS 160, HUS 170; PSY 140, SOC 150, ENG 105; Submission of medical health status record, criminal and child abuse records, and other record checks required by the agency placement site; Completion of agency required training, e.g. CPR, first aid. HUS faculty approval.

Students will be given experiences at a human services agency to apply the knowledge, values, concepts, and skills of the human services profession. The student will complete 180 hours with a minimum of 12 hours per week under the direct supervision of the agency's personnel. Under direct supervision, students will observe and participate in the basic procedures and routines with the client and the agency system. Emphasis will focus on the student's professional growth in self-awareness, direct service, interpersonal communication, interviewing skills, and the introduction to the human services delivery system.

HUS 230 Internship II 3½:1:0:0

Prerequisite(s): Minimum C grade in HUS 210 and HUS 220; Submission of medical health record status, criminal and child abuse records, and other record checks required by the agency placement site; Completion of agency required training, e.g. CPR, first aid; HUS faculty approval.

Students will be given experiences at a human services agency to apply the knowledge, values, concepts, and skills of the human services profession. The student will complete 180 hours with a minimum of 12 hours per week under the supervision of the agency's personnel. With minimal supervision, students will observe and participate in the helping process with clients and within the policies and procedures of the agency system. Emphasis will focus on the student's professional growth in self-awareness, interpersonal communication, interviewing skills, case management, advocacy, crisis management, and community outreach.

HUS 240 Management of Human Services Agencies 3:3:0:0

Prerequisite(s): Minimum C grade in HUS 210 and HUS 220

Provides an overview of the human service agency from the management perspective. Organizational theories are discussed. Purposes and functions of management are explored. Components of management, including but not limited to service environment, marketing, planning, program designing, managing, financing, and evaluating are discussed. Attention is focused on current and future trends within delivery systems and their impact on management and administrative policy. Legal and ethical issues are addressed within the context of resource management.

Interdisciplinary Studies**IDS 105 Thinking, Problem Solving, and Team Building 3:3:0:0**

This course is based upon the premise that the thinking process is a skill that can be examined, improved, and is independent of intelligence. Practical thinking tools are presented and practiced using everyday situations and problems. Creative methods of problem solving are also explored. Methods of working effectively in teams are presented, and team interaction is an integral part of every class. Throughout this course, students are required to apply the techniques presented to real-life situations.

IDS 154 Introduction to Women's Studies 3:3:0:0**Prerequisite(s):** ENG 105**Corequisite(s):** ENG 106

This interdisciplinary and multidisciplinary course is a preliminary exploration of the ever burgeoning literature of Women's Studies. It will expose students to recent discussions about the origins of present attitudes about women in Western society; critical analysis of the situation of women in patriarchal cultures; and efforts by women to achieve self-defined female identity. Drawing on materials from literature, history, religion, biology, psychology, feminist analysis, anthropology, and sociology, the course will investigate cultural beliefs about women's "nature" and role at different times and places; various attempts to explain the origins and persistence of female subordination; and women's efforts to define a new identity through political and creative activity.

IDS 214 Selected Topics in Ideas and Culture I 3:3:0:0**Prerequisite(s):** ENG 105 (when appropriate, admission will be by instructor's permission only)

An interdisciplinary humanities and social sciences course designed to explore in-depth a particular set of concepts or a culture. Every course will draw upon a variety of materials, including literary works, academic reports, journalistic accounts, musical pieces, films, paintings, and/or sculptures; every course will also examine its topic from a variety of disciplinary perspectives. Where appropriate, travel may be incorporated into the course. The course topic will be selected at the instructor's discretion and may change from semester to semester. Possible topics might include: Italy Past and Present; Violence, War, and Genocide; Social and Economic Justice; Social Critique Through Music; Postmodernism; or Technology and Morality. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme; transcripts will list the second enrollment as IDS 215.

IDS 215 Selected Topics in Ideas and Culture II 3:3:0:0**Prerequisite(s):** IDS 214

An interdisciplinary humanities and social sciences course designed to explore in-depth a particular set of concepts or a culture. Every course will draw upon a variety of materials, including literary works, academic reports, journalistic accounts, musical pieces, films, paintings and/or sculptures; every course will also examine its topic from a variety of disciplinary perspectives. Where appropriate, travel may be incorporated into the course. The course topic will be selected at the instructor's discretion and may change from semester to semester. Possible topics might include: Italy Past and Present; Violence, War, and Genocide; Social and Economic Justice; Social Critique Through Music; Postmodernism; or Technology and Morality. This course is for students who have taken IDS 214 and wish to repeat that course for credit in a semester featuring a different theme.

IDS 218 Honors Research Seminar 1:1:0:0

Provides a forum for discussion, analysis, and presentation of research ideas, methods, and topics for students who are in the Honors Scholars program. Students are expected to be working concurrently on an Honors Course Experience project for another academic course. Students will present their finished project at the end of the course.

IDS 270 Disney College Program Experience 6:3:0:225**Prerequisite(s):** Disney staff approval

Students spend four to seven months at Walt Disney World, Lake Buena Vista, Florida or at the Disneyland Resort complex in Anaheim, California; students participate in the Disney College Program internship. Students who are chosen work in a major operating area in one of the theme parks, resorts, or entertainment venues such as Foods, Merchandise, Operations, Tickets, Water Recreation, and Transportation. Students are housed in apartments located near the Disney Resort complex. This course is a combination working, learning, and living experience that is open to all majors. Selection to participate in the program is competitive and is based upon approval by the Disney recruiting team.

Kitchen and Bath Design**KBD 101 Introduction to Interior Design 3:3:0:0**

Provides students with the basic compounds of the interior design field. Students will learn the principles of color, form, and space as it applies to interior spaces. Period styles, furnishings, lighting and colors, materials and textures, and design principles will be covered. Other areas of study will be ergonomics and functionality.

KBD 102 Color and Textures 3:3:0:0

Provides students with the basic principles of color and texture as it relates to interior design. Understanding the use of colors and textures provides different psychological looks and feels that students will be able to experiment with through various class-related projects.

KBD 103 Interior Finishing 4:3:3:0**Prerequisite(s):** CON 101 or equivalent

Provides the student with techniques necessary to finish the interior of residential and light commercial structures. The students will be exposed to a variety of materials commonly used in finish construction as well as the proper procedure for installation. This course will require students to demonstrate several techniques studied in this course on a building project.

KBD 104 Kitchen/Bath Design Principles 3:3:0:0**Prerequisite(s):** CON 101 or equivalent

Familiarizes the student with the basic principles of kitchen/bath equipment and the mechanical systems needed to make them function properly. As a result of this exposure through classroom lecture and demonstrations, students will gain a greater awareness and understanding to allow them to design effective and efficient room layouts.

KBD 105 Kitchen/Bath CAD Design 2:2:0:0**Prerequisite(s):** CON 101 or equivalent

Provides the student with the use of the microcomputer for kitchen/bath designs. A software package presently used by experienced designers will be utilized throughout this course for industry compliance. Project designs will be done completely on computer and finished designs will be printed out for presentation purposes.

KBD 201 Kitchen/Bath Graphic Design 4:3:3:0**Prerequisite(s):** KBD 104 and MET 111 or equivalent

This course is a CAD based design course intended for students to produce formalized kitchen and bath design projects determined by the NKBA student design requirements. Floor plans, Construction, Electrical, and Elevation drawings specifically related to the kitchen/bath industry will be produced. Students will also be introduced to commercial design projects by specifying restaurant/cafe/teraria related equipment to be included in each design.

KBD 202 Kitchen/Bath Estimating 2:2:0:0**Prerequisite(s):** KBD 103

Familiarizes the students with the basic principles of interior design estimating. Topics covered will deal with cabinets, appliances, lighting, wall and window treatments, flooring materials, and the labor involved to effectively furnish kitchen and bath areas. Students will learn these principles and apply them through several case studies throughout the course.

KBD 203 Kitchen and Bath Studio 4:3:3:0**Prerequisite(s):** KBD 101, 103, and CON 101**Corequisite(s):** KBD 105

Provides students the opportunity to focus their design skills in the area of kitchens and baths. Students will design kitchen and bath layouts based on given criteria and specifications. Upon completion of their finished design layout, students will install cabinets, countertops, and trim work to complete the project.

KBD 210 Intern Experience 1:0:0:75**Prerequisite(s):** KBD 103, 104, or permission of instructor

The student is given the opportunity to apply knowledge and skills acquired in the classroom to actual design situations through a cooperative experience. Students will evaluate their efforts and workplace experience by producing a written analysis of their observations. The student will be responsible to obtain a workplace for which this internship experience would appropriately apply. The instructor will assist in this area whenever possible.

Mathematics

Students must take the Mathematics Assessment test or consult with an advisor regarding appropriate placement before enrolling in any mathematics course. Appropriate placement will be made based on the score of that test and/or high school mathematics background. MAT courses numbered 100 or lower cannot be used to satisfy mathematics requirements in any program. Students required to take MAT 090, 098, 099, or 100 must attain at least a "C" in that course before taking any higher-numbered mathematics courses. Students completing MAT 099, 100, 105, 130, 160, 170, or 191 with a "C" or better should not subsequently enroll in a lower numbered mathematics course from the above list, nor in MAT 090. Credit for graduation will not be given for the lower numbered course, unless the appropriate dean approves an exception to this policy. Students will not be awarded credit for both MAT 090 and 100.

Scientific, statistical, financial, or graphing calculators are required for all mathematics courses except MAT 098. For those courses that require a graphing calculator, any model of the TI83 or TI84 graphing calculator is preferred. See bookstore listing for the specific type required in each course.

All course prerequisites should be satisfied within three years of registering for a particular mathematics course.

MAT 090 Mathematical Literacy 6:6:0:0**Prerequisite(s):** LCCC Algebra Placement Testing score < 77 or SAT Math < 500

Designed to prepare the student for a successful transition to college-level mathematics. Addresses topics including evaluating numerical expressions composed of whole numbers, integers, signed fractions and decimals, rates, ratios, and percents; simplifying and evaluating a variety of algebraic expressions and polynomials in one or more variables and using exponent laws; solving first-degree equations and inequalities in one variable, proportions, and percent equations; creating scattergrams and graphing algebraic equations in two variables; using critical thinking and modeling skills to solve a variety of authentic application problems. A scientific or graphic calculator is required for this course.

NOTE: This course cannot be used to satisfy the mathematics requirement in any program without approval of the program coordinator.

MAT 098 Basic Skills Math 3:3:0:0**Prerequisite(s):** COMPASS MATH < 20

Designed to prepare the student for a successful transition to MAT 099 (Prealgebra). Addresses topics which form the basis of all mathematical thought. Developing proficiency with numerical manipulation and a good understanding of the non-negative rational number system are the main goals of this course. Problem-solving skills and their real-world applications are also stressed. Topics to be discussed include whole numbers, fractions, and decimals.

NO calculator is allowed for this course.

NOTE: MAT 098 is not to be taken by the student who has successfully completed a mathematics course (at least a "C") at least at the MAT 099 level. This course cannot be used to satisfy mathematics requirements in any program.

MAT 099 Prealgebra 3:3:0:0

Prerequisite(s): COMPASS (Math 20) or MAT 098 (at least a "C")

Designed to prepare students for successful transition to MAT 100 (Beginning Algebra). Students solve problems using basic arithmetic computational skills and begin to use a variable for solving purposes in a variety of applications. Competency with integers, order of operations, and evaluating expressions is expected by the completion of the course. A scientific calculator is required.

NOTE: MAT 099 is not to be taken by the student who has successfully (at least a "C") completed a mathematics course at least at the MAT 100 level. Exceptions can only be made by the coordinator of the mathematics department. This course cannot be used to satisfy mathematics requirements in any program.

MAT 100 Beginning Algebra 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 77 or MAT 099 (at least a "C")

Reviews the operations with whole numbers, fractions, decimals, and integers and then introduces basic algebra topics. These topics include equations and algebraic expressions, polynomials, factoring polynomials, rational expressions, first-degree equations and inequalities, and graphing linear equations.

NOTE: MAT 100 is not to be taken by the student who has successfully (at least a "C") completed MAT 105, 130, or a mathematics course above the MAT 130 level. Exceptions can only be made by the coordinator of the mathematics department.

A student who completes MAT 100 cannot enroll in any higher level mathematics course unless he or she earns at least a "C" in MAT 100. A scientific or graphing calculator is required for this course. This course cannot be used to satisfy mathematics requirements in any program.

MAT 105 Intermediate Algebra 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 77 and two years of high school Algebra or MAT 090 or MAT 100 (at least a "C")

An overview of basic algebraic concepts to prepare students for more advanced work in mathematics. Emphasizes fundamental operations, special products and factoring, fractional expressions, functions and graphs, systems of equations, integral and fractional exponents, radicals, and quadratic equations and functions.

NOTE: MAT 105 is not to be taken by the student who has successfully (at least a "C") completed a mathematics course at least at the MAT 130 level. A graphing calculator is required.

MAT 118 Business and Financial Mathematics 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 77 or MAT 090 or MAT 100 (at least a "C")

Assists the student in developing proficiency in the mathematical skills required in business. Among items studied are percentages, cash and trade discounts, retail pricing, payroll, simple interest and discount, taxes, installment purchases, insurance protection, compound interest, annuities, mortgages, and other amortized loans. A scientific or financial calculator is required for this course.

MAT 120 Survey of Mathematics 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 77 and two years of high school Algebra or MAT 090 or MAT 100 (at least a "C")

Introduces topics which expose the student to a variety of discrete mathematical tools. Developing critical thinking and problem-solving skills are unifying goals in this course. Topics to be discussed include problem-solving strategies, introduction to set theory, and an introduction to counting, probability, and statistics. A scientific calculator is required for this course.

MAT 121 Mathematics for Allied Health 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 77 and two years of high school Algebra or MAT 090 or MAT 100 (at least a "C")

Includes applications of dosage computations, the metric and customary systems, and unit conversion as needed in health fields. Additional investigations in critical thinking, graph interpretation, logical thinking, and statistical reasoning will be explored from both a health-related and mathematical point of view. MAT 121 and 150 or MAT 121 and BUS 150 cannot both be taken for credit. A scientific calculator is required.

MAT 125 Fundamentals of Mathematics I 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 107 or MAT 105 (at least a "C")

Designed for the future elementary, special education, or early childhood teacher only. Revisits school mathematics topics as recommended by the NCTM Principles and Standards with an emphasis on problem solving in an activity-based environment. Included are set theory and functions, logic and deductive reasoning, the development of our numeration system, and operations and number theory. A scientific calculator is required.

MAT 126 Fundamentals of Mathematics II 3:3:0:0

Prerequisite(s): MAT 125 (at least a "C")

Designed for future elementary, special education, or early childhood teachers only. Revisits school mathematics topics as recommended by the NCTM Principles and Standards with an emphasis on problem solving in an activity-based environment. Includes probability, statistics, geometry, and measurement. A scientific calculator is required.

MAT 130 Industrial Mathematics 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 107 or MAT 105 (at least a "C")

Designed for students interested in a technical program. Emphasis is on utilization of basic mathematical concepts. Topics include basic algebraic applications, trigonometric functions and graphs, Geometry, functions, equations, vectors, and introductory statistical process control.

NOTE: MAT 130 is designed for the student who does not plan to pursue a four-year college degree. It is not designed to serve as a prerequisite for MAT 160, 165, 170, or 191. A graphing calculator is required for this course.

MAT 150 Introduction to Probability and Statistics 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 107 and two years of high school Algebra or MAT 105 (at least a “C”)

For students in programs where measurements and predictions are made. Topics include the following: tabulation of data, measures of central tendency and dispersion, sampling, types of distributions, probability, hypothesis testing, and elementary aspects of correlation. A graphing calculator is required.

MAT 155 Finite Mathematics for Business and Social Science 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 107 and two years of high school Algebra or MAT 105 (at least a “C”)

Provides the student with an introduction to linear functions, linear systems, linear programming, matrix algebra, nonlinear models, sets and probability. Applications in business, finance and the social sciences will be emphasized. A graphing calculator is required.

MAT 160 College Algebra 3:3:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 107 and two years of high school Algebra or MAT 105 (at least a “C”)

Emphasizes such topics as exponents and radicals, factoring, complex numbers, rational expressions, functions and their graphs, shifting and reflecting graphs, inverse functions, solving equations and inequalities both algebraically and graphically, linear regression, polynomial and rational functions, exponential and logarithmic functions, and systems of equations. A graphing calculator is required.

MAT 165 College Trigonometry 3:3:0:0

Prerequisite(s): MAT 160 (at least a “C”) or LCCC Algebra Placement Testing score of 109 and equivalent college Algebra background

This course offers a rigorous approach to both the theory and application of basic trigonometry and related geometric considerations. Topics include trigonometric functions, radian measure, graphing, identities and equations, inverse functions, vectors, conic sections, parametric equations, and polar curves. A graphing calculator is required.

MAT 170 Precalculus 4:4:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 109 and high school math through Trigonometry

Designed for students whose backgrounds are not sufficient to immediately begin the calculus sequence. Serves any student looking for a mature investigation of algebra and trigonometry. This one-semester course covers the topics included in MAT 160 and 165 at a relatively rapid pace. Topics include polynomials, systems of equations, sequences and series, trigonometric functions and graphs, inverse functions, exponential and logarithmic functions, identities and equations, parametric equations, and polar curves. A graphing calculator is required.

MAT 188 Business Calculus 3:3:0:0

Prerequisite(s): MAT 160 (at least a “C”) or LCCC Algebra Placement Testing score of 109 and equivalent high school mathematics background

Designed for students in business programs. Topics covered include linear, quadratic, polynomial, rational, exponential and logarithmic functions, differential and integral calculus of a single variable; and various applications to business and economics.

NOTE: This course is not to be taken in place of MAT 191 (Calculus & Analytic Geometry I) and does not serve as a prerequisite to MAT 196 (Calculus & Analytic Geometry II). A graphing calculator is required (TI-83/84 or 83/84 PLUS preferred).

MAT 191 Calculus and Analytic Geometry I 4:4:0:0

Prerequisite(s): LCCC Algebra Placement Testing score of 109 and high school math through Trigonometry, or both MAT 160 and 165 (at least “C” grades), or MAT 170 (at least a “C”)

Primarily intended for students majoring in science, mathematics, or engineering. Topics include data analysis, limits, differentiation with applications (optimization and related rates), and integration. A graphing calculator is required.

MAT 196 Calculus and Analytic Geometry II 4:4:0:0

Prerequisite(s): MAT 191 (at least a “C”)

Presents such topics as applications of the definite integral, logarithmic and exponential functions, hyperbolic functions, inverse trigonometric functions, techniques of integration, improper integrals, and L'Hopital's Rule. A graphing calculator is required.

MAT 201 Calculus and Analytic Geometry III 4:4:0:0

Prerequisite(s): MAT 196 (at least a “C”)

Investigates infinite series, analytic geometry, and vectors. Topics include power series, Taylor's Theorem with remainder, curves and equations in rectangular coordinates, conic sections, polar coordinates, parametric equations, and the Algebra of vectors. A graphing calculator is required.

MAT 203 Discrete Math 3:3:0:0

Prerequisite(s): MAT 191 (at least a “C”)

Designed for students majoring in mathematics or computer science and others desiring a broader mathematics perspective. Topics include logic, sets, methods of proof, relations, functions, mathematical induction, counting techniques, probability, recurrence relations, mathematical systems, and graph theory.

**MAT 230 Differential Equations
With Linear Algebra 4:4:0:0****Prerequisite(s):** MAT 201 (at least a "C")

Ordinary differential equations of the first and second order with applications, operators, Laplace Transforms, vibration analysis, electrical circuits, and solutions in series are examined. Matrix algebra is introduced and applied to find characteristic vectors and solutions to systems of linear differential equations. A graphing calculator is required.

**MAT 250 Selected Topics in
Mathematics I 1:1:0:0**

An interdisciplinary math and science course designed to introduce students to various topics within the natural sciences and their mathematic components Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme: their transcripts will list the second enrollment as MAT 251.

**MAT 251 Selected Topics in
Mathematics II 1:1:0:0****Prerequisite(s):** MAT 191 or permission of instructor

An interdisciplinary math and science course designed to introduce students to various topics within the natural sciences and their mathematic components Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme: their transcripts will list the second enrollment as MAT 251.

Mechanical Technology**BGT 101 Basic Statics 3:3:0:0****Prerequisite(s):** MAT 130, 165, or equivalent

A noncalculus introduction to the analysis of forces acting upon bodies at rest. Vector addition, moments, force systems in two and three dimensions, trusses, friction, internal forces, stress, strain, and modulus of elasticity.

BGT 102 Strength of Materials 3:3:0:0**Prerequisite:** BGT 101

A continuation of BGT 101. Bolted joints and welds, thin-walled pressure vessels, center of gravity and moment of inertia, beam analysis, torsion and angle of twist, power transmission, columns, combined stresses.

BGT 103 Fluid Power 3:3:0:0**Prerequisite(s):** MAT 105 or equivalent

The study of fluid power applications, including hydraulics, pneumatics, and fluidics. Topics of study include the design of fluid power circuitry, set-up procedures, and the operation of fluid power equipment for power transmission and machine control.

**BGT 110 Fundamentals of
Technology 3:2:2:0**

A basic course for individuals entering any of the technology programs. Designed to give entering students the necessary skills to be successful in the beginning technical subjects. The areas covered include fundamental computer operation, introduction to word processor use, and basic technical procedures. Provides an overview of the specific technical career programs offered by the college.

BGT 240 Industrial Automation 3:2:2:0**Corequisite(s):** ELE 235, BGT 103

Covers many of the basic fundamental principles of sorting, handling, and transporting of workpieces through various manufacturing processes. Standard industrial components from manufacturers' catalogs will be utilized for solving specific automation applications. Robots in various forms are an integral part of automation systems. Students will study the benefits and characteristics of each robot type and how it can be utilized most effectively.

MET 101 Mechanical Print Reading 3:3:0:0

This course introduces the necessary principles of creating and interpreting mechanical engineering drawings. Topics will include view interpretation, dimensions, sections, aligned views, geometric tolerancing, assembly drawings, along with various symbology used throughout the industry. Information covered in this course will conform to ANSI National Standards that are used by most manufacturers and engineering departments. This course is required for all students enrolled in drafting and design, mechanical technology, and mechanical engineering technology. This course is also recommended for others who are interested in engineering or other related fields of study.

MET 104 Manufacturing 3:3:0:0

Presents topics that investigate the materials of industry and the processes used to transform them into finished products. Emphasis is placed on the changing role in manufacturing with regard to new engineered materials and the processing of these materials with high tech, computer-controlled equipment.

MET 105 Machine Shop 3:2:3:0

Gives the student direct experience in the operation of metal-cutting machine tools. Helps make the student more aware of the special problems that are encountered by industrial shop personnel.

MET 106 Mechanical Drafting 4:2:6:0**Prerequisite(s):** MET 101

Provides experience in special areas of drafting, such as pattern development layout, piping drawings, electronic drawings, structural steel drawings, and welding drawings. The use of standard symbols, handbooks, commercial catalogs, and computer-aided drafting (CAD) hardware and software are stressed.

MET 111 Computer-Aided Drafting 4:4:2:0**Prerequisite(s):** MET 101, HAC 119, EGR 101, BGT 105

Prepares students to proficiently operate a C.A.D. workstation to produce working drawings. The AUTOCAD software being used, will be the most current, so that upon graduation the students will be familiar with the standard of industry. Emphasis will be placed on using the software and all its capabilities to efficiently create mechanical and architectural drawings.

MET 115 Computer-Aided Manufacturing **3:3:1:0**
Investigate state-of-the-art manufacturing methods presently found in industry. Major emphasis will be placed on the study of development of CNC programming techniques. Additional topics covered are robotics, flexible manufacturing systems, and cells.

MTD 200 Introduction to Mechanisms **3:2:3:0**
Prerequisite(s): BGT 105 or equivalent and MAT 130 or equivalent
Involves the study of basic mechanical motion and components, such as gears, cams, couplings, springs, and clutches.

MTD 201 Basic Mechanisms **4:2:6:0**
Prerequisite(s): MET 101 and/or 106 and MAT 130 or equivalent
The various machine components—such as gears, cams, couplings, springs, clutches—are studied. This study determines the transmission capabilities of the machine parts relative to speeds, forces, and power.

MTD 206 Machine Design **4:2:6:0**
Prerequisite(s): MTD 201
The student applies his or her knowledge and creative talents of mechanical components to the design of a machine capable of operating in a prescribed manner.

MTD 208 Tool Design **4:2:6:0**
Prerequisite(s): MET 106
Study of procedures used to design cutting tools, gauges, simple jigs, fixtures and dies, and the application of these parts to production methods. Emphasis will be placed on the design and development of tooling currently used for CNC equipment. Computer-generated designs using tooling software are an integral part of this course.

MTD 210 Designing for Manufacturability **2:2:0:0**
Prerequisite(s): MET 101 or equivalent
Involves the investigation and study of the concepts involved in designing a product for efficient manufacturability. Course material will be based upon current engineering design and manufacturing techniques utilized in industry. The importance of effective designs with improved time-to-market skills is stressed as an essential component in today's competitive global market.

Medical Assistant

MED 101 Introduction to Medical Assisting **3:3:0:0**
Includes an overview of the history of medicine and an orientation to the field of medical assisting. Emphasized are the course of scientific development and related medical progress, major medical discoveries and their discoverers or inventors, the duties and responsibilities of the medical assistant, the legal and ethical responsibilities of the physician and his or her employees, and the various areas and specialties of medical practice. Professional and personal characteristics and skills of the professional medical assistant are emphasized.

MED 102 Medical Assisting I **5:5:0:0**
Anatomy of the various body systems and principles of physiology are presented. Includes the study of medical abbreviations, prefixes, suffixes, word roots, combining forms, and plurals. The pronunciation, spelling, and defining of medical terms are emphasized in building a professional vocabulary required for subsequent courses and working in medical facilities concerned with the diagnosis of diseases and treatment of patients. Course enrollment is limited to medical assisting, medical secretarial, and medical transcriptionist students.

MED 104 Clinical Procedures I **3:2:3:0**
Prerequisite(s): MED 101
Corequisite(s): MED 102
Students learn the role of the medical assistant in maintaining office efficiency, supplies and equipment, the basic clinical procedures for the care, handling, and sterilization of equipment and supplies, maintaining standard precautions and asepsis, the measurement of vital signs, how to assist the physician during physical examinations, irrigating and instillation procedures, and are introduced to basic physical therapy modalities. The mathematics of drug preparation, drug accountability, and drug law are covered.

MED 201 Medical Assisting II **3:3:0:0**
Prerequisite(s): MED 101, 102, 104, and certification in healthcare provider cardiopulmonary resuscitation
Study of first aid and the handling of medical emergencies in the medical office, the process of diagnosis, the treatment and possible causes, symptoms, and complications of infectious diseases, allergies, neoplasms, and musculoskeletal diseases. Introduction to pharmacology through the study of principles of chemotherapy, drug sources, uses, actions, drug laws, and reference materials. Drugs that are specific for the disease categories covered and additional terminology are presented.

MED 202 Medical Assisting III **3:3:0:0**
Prerequisite(s): MED 101, 102, 104, 201, 203, 205 and certification in healthcare provider cardiopulmonary resuscitation
Disease conditions and the corresponding pharmacology of the circulatory, respiratory, digestive, nervous, urinary, integumentary, reproductive, and endocrine systems as well as common antibiotics, controlled substances, and additional disease and pharmacological terminology are presented.

MED 203 Clinical Procedures II **3:2:3:0**
Prerequisite(s): MED 101, 102, 104
Corequisite(s): MED 201
Enables students to perform more advanced clinical procedures that may be required in various physicians' offices. Included are the preparation and administration of oral, injectable, and topical medications, the basic procedures for diagnostic tests, including the handling and preservation of specimens, urinalysis, capillary and venous blood withdrawal, basic blood tests, electrocardiography, audiometry, tympanometry, and pulmonary function screening. The role of the assistant in office minor surgery, wound care, and urinary catheterization is also presented.

MED 205 Clinical Experience I 2:0:0:120

Prerequisite(s): Satisfactory completion of listed first and second semester courses

Prerequisites or corequisites: third semester courses, consent of instructor responsible for the course, a grade point average (GPA) of 2.0, and at least a "C" in medical assisting and office technology courses

Following coordinator's approval, students spend one day each week of their second fall semester in local physicians' offices or hospitals observing and participating in basic procedures used in the operation of clinical, laboratory, and secretarial areas.

MED 206 Clinical Experience II 2:0:0:120

Prerequisite(s): Satisfactory completion of listed first, second, and third semester courses

Prerequisites or corequisites: listed fourth semester courses, consent of instructor responsible for the course, a grade point average (GPA) of 2.0, and at least a "C" in medical assisting and office technology courses

Following coordinator's approval, students gain additional practical experience in physicians' offices or hospitals by participating in various medical-secretarial, administrative, clinical, and laboratory procedures under the supervision of office personnel.

MED 216 Medical Office Management 3:3:0:0

Prerequisite(s): AOT 251 (grade of "C" or higher)

Develops an understanding of management methods used in today's office, proficiency in identifying and complying with statutory regulations, and integrates concepts of modern technology in communications, preparation of financial data, personnel data, office/practice management, and records management.

Emphasizes methods for ensuring effective office/practice management and communication through monitoring and coordination of all office components including those related to administration of people, procedures, equipment, and environment; budgeting of monies, time, equipment, personnel, and supplies; adherence to statutory regulations, especially those germane to the medical office; and personnel hiring and training, allocation of duties, personnel evaluation, and termination. Emphasizes the role of technology in today's healthcare setting.

Music

MUS 101 Introduction to Music 3:3:0:0

A course which surveys music as a broad whole including classical music, popular music, and music of other cultures. The course also explores the various uses of music in daily life. Designed to develop perceptive listening through the study of the basic elements of musical properties, forms, applications, and styles.

MUS 105 Music After Mozart 3:3:0:0

Prerequisite(s): MUS 101 or permission of instructor
This is an advanced course dealing with the forms and history of music since the time of W.A. Mozart (1756-1791). Subject material includes the late classical period, romanticism, nationalism, and impressionism as well as jazz, primitivism, neo-classicism, folk, popular music of America, and music of non-Western cultures. Recorded music will be used in class, and students will be expected to experience live musical performance as part of the academic experience.

MUS 107 American Popular Music 3:3:0:0

This is a course dealing with the forms and history of American popular music from its 19th century origins to the present. Subject material includes early song forms, folk music, the blues, ragtime, early jazz, big band music, bebop, rhythm and blues, country and Western, rock 'n roll (early phases as well as recent trends), and musical theater. Recorded musical examples will be used. Students will be expected to attend at least one performance outside of class and to present a report on an assigned topic in class.

MUS 111 Choral Ensemble 1:0:3:0

Students study and perform choral music from a variety of styles and historical periods. Vocal techniques, music reading skills, and choral elements such as blend, intonation, and diction are developed. No previous musical training is required. Students will be expected to do some out-of-class preparation between rehearsals. Public performance is required.

Nanofabrication Technology

These courses are designed to be capstone courses for the Nanofabrication Technology program. These courses are lab intensive, leveraging the nanofabrication facility at the University Park campus of Pennsylvania State University. All lectures will be given in a technology classroom. This classroom is dedicated to the Center for Nanofabrication Manufacturing Technology and thus has a wide variety of specialized, hands-on materials and facilities continually available to students.

SMT 211 Materials, Safety, and Equipment Overview for Nanofabrication 3:2:2:0

Prerequisite(s): Semester one to three of SMT program

Corequisite(s): Fourth-semester SMT courses

Provides an overview of basic nanofabrication processing equipment, and materials handling procedures. The focus is on procedural, safety, environment, and health issues in equipment operation and materials handling. Topics to be covered include cleanrooms operation, safety, and health issues; vacuum pump systems operation, environmental, safety, and health issues (covering direct drive mechanical roots blowers, turbomolecular, and dry mechanical systems); furnace operation, safety, environmental, and health issues (covering horizontal, vertical, rapid thermal annealing tools); chemical vapor deposition system operation, safety, environmental, and health issues (covering gas delivery, corrosive and flammable gas storage and plumbing, regulators, and mass flow controllers); and vacuum deposition/etching system operation, safety, environmental, and health issues (covering microwave and RF power supplies and tuners, heating and cooling units, vacuum gauges, valves, and process controllers). Specific materials handling issues include DI water, solvents, cleansers, ion implantation sources, diffusion sources, photoresists, developers, metals, dielectrics, and toxic, flammable, corrosive, and high purity gases as well as packaging materials.

SMT 212 Basic Nanofabrication Processes**3:2:2:0****Prerequisite(s):** Semester one to three of SMT program**Corequisite(s):** Fourth-semester SMT courses

Provides an overview of basic processing steps in nanofabrication. The majority of the course details a step-by-step description of the equipment and processes needed to fabricate devices and structures. Processing flow will be examined for structures such as microelectromechanical (MEM) devices, biomedical “lab-on-a-chip” structures, display devices, and microelectronic devices, including diode, transistor, and full CMOS structures. Students will learn the similarities and differences in both equipment and process flow for each configuration by undertaking hands-on processing.

SMT 213 Thin Films in Nanofabrication**3:2:2:0****Prerequisite(s):** Semester one to three of SMT program**Corequisite(s):** Fourth-semester SMT courses

Covers thin film deposition and etching practices in nanofabrication. The deposition techniques to be included in the first part of the course will include atmospheric, low pressure, and plasma-enhanced chemical vapor deposition and sputtering, thermal evaporation, and beam evaporation physical vapor deposition. Materials to be considered will include dielectrics (nitride, oxide), polysilicon (doped and undoped), metals (aluminum, tungsten, copper), adhesion promoters, and diffusion barriers. The second part of the course will focus on etching processes and will emphasize reactive ion etching (single wafer, batch), high-ion-density reactors, ion-beam etching, and wet-chemical etching. Students will receive hands-on experience in depositing and etching dielectric, semiconductor, and metal materials using state-of-the-art tools and practicing many of the steps critical to nanofabrication of semiconductor devices, including microelectronics, MEMs devices, display structures, and structures used in the biotechnology fields.

SMT 214 Lithography for Nanofabrication**3:2:2:0****Prerequisite(s):** Semester one to three of SMT program**Corequisite(s):** Fourth-semester SMT courses

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. Most of the emphasis will be on understanding the nature and behavior of photoresist materials. The second section examines the process from development through inspection (both before and after pattern transfer). This section will introduce optical masks, aligners, steppers, and scanners. In addition, critical dimension (CD) control and profile control of photoresists will be investigated. The last section will discuss advanced optical lithographic techniques, such as phase shifting masks and illumination schemes as well as e-beam, e-ray, EUV, and ion-beam lithography.

SMT 215 Materials Modification in Nanofabrication**3:2:2:0****Prerequisite(s):** Semester one to three of SMT program**Corequisite(s):** Fourth-semester SMT courses

Covers in detail the processing steps used in modifying material properties in nanofabrication. Included will be growth and annealing processes utilizing horizontal and vertical furnaces as well as rapid thermal annealing. The impact of thermal processing and thermal processing on defects, gettering, impurities, and overall electrical, mechanical, optical, electrical, and chemical properties will be studied. The student will grow and measure gate and field oxides, implant and activate source and drain regions, and evaluate thermal budget requirements using state-of-the-art tools. Included also will be other modification technologies, such as ion implantation, diffusion, and surface preparation and treatment. Substrate preparation processing, such as slicing, etching, polishing, and epitaxial growth, will be covered.

SMT 216 Characterization, Packaging, and Testing of Nanofabricated Structures**3:2:2:0****Prerequisite(s):** Semester one to three of SMT program**Corequisite(s):** Fourth-semester SMT courses

Examines a variety of techniques and measurements essential for controlling device fabrication and final packaging. Monitoring techniques such as residual gas analysis (RGA), optical emission spectroscopy (OES), and end-point detection will be discussed. Characterization techniques—such as SEM, XPS/Auger, surface profilometry, advanced optical microscopy, optical thin film measurements, ellipsometry, and resistivity/conductivity measurements—will be used on real samples. Basic electrical measurements on device structures for yield analysis and process control will also be stressed. These will include breakdown measurements, junction testing, C-V and I-V tests, and simple transistor characterization. In addition, we will examine mechanical as well electrical characteristics of some simple microelectromechanical (MEM) devices and chemical and biological responses of nanofabricated biomedical structures. The student will also learn about the manufacturing issues involved in subjects, such as interconnects, isolation, and final device assembly. Aluminum, refractory metals, and copper deposition techniques and characterization will be discussed in detail along with topics such as diffusion barriers, contact resistance, electromigration, corrosion, stress effects, and adhesion. The importance of planarization techniques, such as deposition/etchback, and chemical/mechanical polishing, will be emphasized. Lastly, packaging procedures, such as die separation, inspection bonding, sealing, and final test for both conventional ICs and novel MEM and biomedical devices, will be examined.

Nursing

ADN 150 Introduction to Basic Human Needs

9:6:3:6½

Corequisite(s): BIO 163; ENG 105; PSY 140; supervised clinical experience

This course introduces the student to nursing knowledge integrating information from biological, social and behavioral sciences in the delivery of nursing care. Fundamental nursing skills are developed to assist humans to promote, maintain and restore health integrity of assigned clients by utilizing evidence based practice, technology and resources for the achievement of quality patient outcomes. An on-line module will introduce pharmacology to the student. This module provides basic pharmacology concepts and principles to nursing students. The content of the module introduces students to the basics of pharmacology and develops the student's theoretical knowledge base of pharmacotherapeutics for nursing practice. Major drug classifications and specific agents will be discussed in relation to pharmacodynamics, pharmacokinetics, therapeutic uses, adverse reactions and precautions.

The nursing process is introduced and developed to provide safe, effective, quality care to individuals across the lifespan. This will include building critical thinking skills that aid the decision making process in the delivery of safe competent nursing care.

An introduction to how to communicate therapeutically will be accomplished to ensure safe, quality care to individuals.

An introduction to inter-personal, evidence based care that is socially responsible, environmentally sounds, and culturally/spiritually sensitive will be proposed.

Students will relate principles of accountability, advocacy and professionalism to the framework of legal/ethical standards of the nursing profession. Inherent in this is the development of a commitment to life-long learning as a professional nurse and a contributing member of the healthcare team by the development of attitudes, values, and personal qualities of the nursing profession.

Concurrent clinical laboratory experience introduces the student to nursing practice in hospitals to enable the student to apply the knowledge and skills learned in the classroom and laboratory. This forms the basis for commitment to the life-long role of a professional nurse and member of the healthcare team.

ADN 160 Meeting Adult Health Needs 8:4:0:13

Prerequisite(s): ADN 150

Corequisite(s): BIO 164; MAT 121 or MAT 150; PSY 145; supervised clinical experience

This course continues to incorporate nursing knowledge from biological, social, and behavioral sciences into the delivery of nursing care of adults. Particular emphasis is given to concentrated nursing knowledge of oxygenation, circulation and hemostasis, elimination, metabolic, endocrine and sensory adult care needs. Health integrity of assigned adults is promoted, maintained and restored using evidence based practice, technology and resources for the achievement of high quality outcomes. Application of the nursing process occurs ensuring safe, cost effective, quality care to individuals, families and communities. Therapeutic communication skills are further developed to ensure safe, quality care to adults. Selected healthcare delivery system environments are used to apply inter-professional, evidence based care that is socially responsible, environmentally sound, and culturally/spiritually sensitive to diverse populations. Students will use principles of accountability, advocacy, and professionalism within the framework of legal and ethical standards of the nursing profession in actual clinical settings. Students will differentiate the nursing role from other members of the healthcare team further developing attitudes, values and personal qualities that reflect commitment to lifelong learning as a professional nurse. During concurrent clinical laboratory experience, the student will provide holistic nursing care to meet the healthcare needs of selected clients in the clinical agencies to enable the student to apply knowledge and skills learned in the classroom, clinical skills laboratory and the previous course clinical settings.

ADN 173 Advanced Transition into Associate Degree Nursing 5:4:0:6½

Prerequisite(s): BIO 164, PSY 140; ENG 105

Corequisite(s): PSY 145; MAT 121 or MAT 150

Focuses on healthcare practices to meet adult health needs along the health-illness continuum. Particular emphasis is given to adaptation to respiratory, cardiovascular, renal, genitourinary, metabolic/endocrine, and sensory needs. Fundamental nursing skills are reviewed and strengthened to meet basic human needs. Previous healthcare experiences of the student are used to further develop knowledge of the cultural-spiritual aspects of nursing. The nursing process is used as a problem-solving tool to develop an individual plan of care. Fundamental principles of therapeutic communication are reinforced and applied in the interaction with individuals, families and groups. Teaching-learning strategies to enhance promotion, maintenance, and restoration of health are developed. Ethical-legal principles and practices are reviewed and applied in the healthcare environment. Dependent and independent responsibilities and functions of the nurse as a member of the nursing profession are examined, and the role of the professional nurse is differentiated from others in the changing healthcare environment. Pharmacologic and nutritional principles are integrated throughout the course. During concurrent clinical laboratory experience, the student will provide holistic nursing care to meet the healthcare needs of selected clients in clinical agencies to enable the student to apply knowledge and skills learned in the classroom. Students will use advanced technologies in the clinical area to reinforce learning. Advanced technologies are used in the clinical setting to enhance student learning.

ADN 205 Meeting the Expanding Family Needs**5:3:0:6½****Prerequisite(s):** ADN 160 or ADN 173**Corequisite(s):** BIO 220; SOC 150 or SOC 151;**ADN 215; supervised clinical experience**

Focuses on the healthcare needs of the traditional and nontraditional family during the childbearing years. The role of individuals, families, and groups in an ever-changing healthcare environment is analyzed. Emphasis is placed on roles, relationships, adaptive, and maladaptive responses experienced in the expanding family. The impact of cultural-spiritual needs on individuals, families, and groups is compared. The nursing process is used to meet and promote adaptive responses to the health needs of the expanding family. Therapeutic communication is applied in the promotion, maintenance, and restoration of health. Teaching-learning interventions appropriate for parenthood, family living, sexuality, and healthcare practices are emphasized. Ethical-legal principles and the role of the professional nurse are incorporated within the ever-changing healthcare delivery system. During concurrent clinical laboratory experience, the student will provide healthcare using holistic concepts to meet the needs of selected patients in the hospital or appropriate community settings to enable the student to apply knowledge and skills learned in the classroom.

ADN 215 Meeting the Developing Family Needs**5:3:0:6½****Prerequisite(s):** ADN 160 or ADN 173**Corequisite(s):** BIO 220, SOC 150 or SOC 151,**ADN 205, supervised clinical experience**

Focuses on the healthcare needs of the developing family. This course introduces the student to pediatric nursing knowledge integrating information from biological, social and behavioral sciences in the delivery of family-centered care. Fundamental nursing skills are further developed to assist families to promote, maintain and restore health integrity of pediatric clients by utilizing evidence based practice, technology and resources for the achievement of quality patient outcomes. Integrated in the course are the physiologic, psychosocial, and cultural spiritual needs of the developing family in an ever changing healthcare environment. The nursing process is used to promote health, prevent abuse, and meet the needs of the child from birth to adolescence. Therapeutic communication is used to promote adaptation and maximize human potential. Emphasis is on teaching learning interventions appropriate for the developmental and chronological age of the child. Ethical legal principles and the role of the professional nurse are incorporated within the ever changing healthcare delivery system.

During concurrent clinical laboratory experience, the student will provide healthcare using holistic concepts to meet the needs of selected patients in the hospital or appropriate community settings to enable the student to apply knowledge and skills learned in the classroom. The student will continue to develop attitudes, values, and personal qualities that reflect a commitment to life-long learning, which in turn fosters transitioning into the role of the professional nurse.

ADN 225 Meeting Human Psychosocial Needs**5:3:0:6½****Prerequisite(s):** ADN 160 or ADN 173**Corequisite(s):** ADN 235, ADN 245, Supervised Clinical Experience, ENG 106 (4th semester students), SOC 151, Social Science/Humanities Elective or ENG 111.

Focuses on the psychosocial needs of individuals, families, and groups. Holistic nursing is practiced in primary, secondary, and tertiary environments. The impact of cultural-spiritual needs on the psychologic and social structure of clients, families, and community is explored. The nursing process is used to meet psychosocial needs by promotion of adaptive responses to increase self-esteem and self-awareness. Therapeutic communication is emphasized and provides the framework for the nurse-client relationship. Teaching-learning strategies are used to enhance promotion, maintenance, and restoration of mental health. Ethical-legal considerations are applied to the interventions with mental health clients, their families, and groups. Professional role responsibilities are related to the ever-changing healthcare delivery system. Crisis intervention, systems, family, group, and organizational theories are discussed. Psycho-pharmacology is included. During concurrent clinical laboratory experience, the student will provide holistic healthcare to meet the psychosocial needs of selected clients who are in the hospital or appropriate community settings to enable the student to apply knowledge and skills learned in the classroom.

ADN 235 Meeting Complex Adult Health Needs**5:3:0:6½****Prerequisite(s):** ADN 160 or ADN 173.**Corequisite(s):** ADN 225, ADN 245, Supervised Clinical Experience, ENG 106, and SOC 150 or SOC 151

Provides a nursing theory base in meeting complex healthcare needs of acutely and/or chronically ill adults. Advanced concepts are provided and correlated to theoretical knowledge and technical skills to meet holistic healthcare needs in a complex environment. Advanced concepts of gastrointestinal, musculoskeletal, immune, hepatic, burn, neurologic, respiratory, renal, and cardiac needs are included. The impact of cultural-spiritual needs on the client and family is examined. The nursing process is used as a basis for correlation between theoretical knowledge and clinical practice and to promote adaptive responses. Emphasis is on the nursing process from assessment through evaluation. The student develops complex problem-solving skills, decision-making skills, and increases the ability to create change within the healthcare delivery system. Therapeutic communication and teaching-learning skills are focused on clients with alteration in communication and learning. Ethical-legal considerations are applied to the adult client with complex health needs. Differentiating the professional nursing role from others in the ever-changing healthcare delivery system is accomplished. During concurrent clinical laboratory experience, the student will provide holistic healthcare to meet the health needs of selected patients in the hospital and nursing home to enable the student to integrate knowledge and skills learned in the classroom.

ADN 245 Meeting the Changing Role in an Evolving Healthcare System 2:2:0:0

Prerequisite(s): ADN 160 or ADN 173.

Corequisite(s): ADN 225, Supervised Clinical Experience, and ADN 235

Emphasizes the autonomous and evolving role of the professional nurse. The health needs of individuals, families, and groups and how they are influenced by society and the environment are discussed. Disaster nursing responsibilities are explored. The impact of cultural-spiritual needs on the delivery of healthcare within the ever-changing healthcare delivery system is analyzed. The nursing process is used to further develop problem-solving and decision-making skills. Interpersonal communication techniques to enhance professional growth will be investigated. Ethical-legal rights and duties will be synthesized. Teaching-learning related to the healthcare needs of society and the evolving role of the professional nurse are discussed. Management styles, leadership roles, and nursing research are analyzed. Role responsibility, accountability, and delegation are discussed.

Occupational Therapy Assistant

OTA 101 Introduction to Occupational Therapy 3:3:0:0

Prerequisite(s): Acceptance into OTA program or permission of instructor

Corequisite(s): OTA 103; BIO 163

Provides an introduction to occupational therapy programs in a variety of settings. Ethical and legal responsibilities, therapeutic relationships, licensure, and certification requirements are discussed.

OTA 103 Therapeutic Media 3½:1½:6:0

Prerequisite(s): Acceptance into OTA program or permission of instructor

Corequisite(s): BIO 163; ENG 105; OTA 101; PSY 140

An introduction to occupational therapy interventions utilizing a variety of crafts and activities for a diverse client population. Activities are analyzed for their therapeutic effect on individuals while considering physical, psychosocial, and contextual issues. A variety of Treatment Interventions, minor crafts and orientation projects are explored. FWE I is included.

OTA 110 Intervention in Occupational Therapy 3½:2:4½:0

Prerequisite(s): OTA 101, 103; BIO 163

Corequisite(s): OTA 116; BIO 164

Exploration of therapeutic use of self, group skills, task skills, and activity analysis focusing on occupation. Cognitive and perceptual skills will be covered. A review of the role/responsibilities of occupational therapy professionals in the community including health and lifestyle management is discussed. FWE I is included.

OTA 116 Principles of Treatment in Adult/Geriatric Rehabilitation 3½:2:4½:0

Prerequisite(s): OTA 101, 103; BIO 163

Corequisite(s): PSY 145; BIO 164; OTA 110

Etiology, characteristics, and precautions of selected physical and psycho-social dysfunctions are studied as they relate to the adult and geriatric patient. Occupational therapy evaluations, treatment approaches, and assistive devices are explored. Treatment options for activities of daily living (ADL), work simplification, home management, functional mobility, and preventative care are analyzed and practiced, and assistive devices are analyzed in relation to specific limitations and disabilities. FWE I is included.

OTA 205 Medical Conditions 3:3:0:0

Corequisite(s): OTA 110, 116; BIO 164; PSY 145

An introduction to medical conditions for which occupational therapy is usually recommended. Etiology, characteristics, and precautions to be observed are presented. Occupational therapy application is studied. FWE I is not included.

OTA 211 Occupational Therapy in Mental Health 4:3:3:0

Prerequisite(s): PSY 140, 145; OTA 110

Corequisite(s): SOC 150

Current theories and practices of occupational therapy in mental health for adolescents, adults, and geriatrics are explored. Individual needs, group structures, group relationships, and problem-solving processes are discussed. Demonstrations of group planning, treatment implementation, and leadership skills for various diagnoses are practiced and evaluated. A review of community treatment facilities is included. Specific diagnoses are presented. Treatment of hypothetical cases is planned and implemented as well as writing goals and progress notes. FWEI is included.

OTA 217 Principles of Treatment in Adult/Pediatric Rehabilitation 4:3:3:0

Prerequisite(s): OTA 110, 116; BIO 164

Corequisite(s): ENG106

Current theories and practice of occupational therapy in adult and pediatric treatment are explored, including typical and atypical development. Selected pediatric and adult evaluations and treatment techniques are presented and practiced. Fieldwork experience provides opportunities to observe and participate in specific evaluation/treatment techniques used with a variety of conditions. Documentation and report writing are practiced. FWE I is included.

OTA 223 Therapeutic Adaptations/Techniques in Occupational Therapy 3:2:3:0

Prerequisite(s): OTA 110, 116; BIO 164

Provides the student with a basic foundation of therapeutic skills and procedures. Techniques and safety in orthotic fabrication, PROM, dexterity and UE assessment, body mechanics, and functional mobility are stressed. The opportunity to practice fabricating adaptive equipment is included. Additional topics include positioning, work rehabilitation, hand injuries, and dysphagia. Visits to selected agencies increase exposure to therapeutic equipment and alternative healthcare practices.

OTA 229 Supervision in Occupational Therapy 2:2:0:0**Prerequisite(s):** OTA 110, 116

Discusses the role of the occupational therapy assistant (OTA) student and the certified occupational therapy assistant (COTA) as a supervisor and as a supervisee in a variety of employment settings. Also discussed will be responsibilities for the supervisor, the supervisory session, functions of supervision, documentation, and current political/economic issues affecting the provision of occupational therapy services. Additional topics covered include state regulations, job descriptions, and alternative practice settings. Marketing and professional development will be explored. Finally AOTA official documents and position papers will be reviewed as they relate to the COTA.

OTA 240 Fieldwork Experience II (FWE II) 12:1:0:640

Prerequisite(s): Completion of first three semester requirements; cumulative grade point average (GPA) of 2.30 in Occupational Therapy Assistant (OTA) courses; at least a "C" in all OTA courses; free of communicable diseases and acceptable health status; faculty approval. Provides supervised experience with patients in selected facilities. The experience will be varied and may include physical rehabilitation, mental health, pediatric, hand therapy, work programs, home care, and nontraditional settings. Two eight-week experiences are scheduled and required. Four seminars are held on campus to discuss the fieldwork experience. The student must successfully complete the scheduled fieldwork within the semester. All fieldwork level II must be successfully completed within 18 months of the last academic semester.

Paralegal Studies**PLG 105 Law Office Technology 3:3:0:0****Prerequisite(s):** AOT 112, 113, and 114 or AOT 115

This course introduces the fundamentals of how to use computer technology to accomplish tasks performed by paralegals in a law office or in a legal setting.

PLG 115 Law Firm Experience 3:3:0:0

This course explores the legal workplace environment and the skills necessary for employment in a legal office setting. Some of the areas that will be covered are telephone skills, office equipment usage, letter and memo format, factual research, and the various divisions and functions included in the court structure. The course will also review the legal terminology in specific areas of law as well as various document preparation techniques.

PLG 120 Introduction to Paralegal Studies 3:3:0:0

The paralegal profession is introduced in this course. The student will be exposed to the court systems of both the federal government and individual states as well as various legal concepts and terminology. Ethics and limitations of paralegals are explored. Legal research, legal writing, and analysis as well as time and billing software are also course components.

PLG 125 Workers' Compensation Practice for the Paralegal 2:2:0:0**Prerequisite(s):** LCCC English Placement Testing score of 57 or ENG 105

Provides paralegal students with a knowledge of the workers' compensation laws and the legal concepts embodied in the Pennsylvania Workers' Compensation Act. Other topics include practice and procedure before administrative judges, trial issues, and the relationship of workers' compensation law to other administrative entitlements, such as Social Security Disabilities.

PLG 130 Social Security Disability Practice for Paralegals 2:2:0:0**Prerequisite(s):** LCCC English Placement Testing score of 57 or ENG 105

Provides paralegal students with a knowledge of the laws involved in Social Security Disability practice, as well as the practice and procedure before administrative judges, trial issues, and relationship to other administrative entitlements, such as workers' compensation.

PLG 135 Interviewing for Paralegals 1:1:0:0**Prerequisite(s):** LCCC English Placement Testing score of 57 or ENG 105

Provides paralegal students with a knowledge of the interviewing skills that are to be mastered in a legal setting. Interviewing skills are essential skills for the well-educated paralegal. Students will be exposed to the different types of interview situations that may be encountered in a legal setting. Students will demonstrate knowledge of interviewing by conducting various types of interviews. Students will also be required to understand the ethical responsibilities in interviewing. The course will also provide communication skills necessary for effective interviewing techniques.

PLG 150 Torts and Personal Injury Law 3:3:0:0**Prerequisite(s):** LCCC English Placement Testing score of 57 or ENG 105 or permission of instructor

Introduces the student to civil wrongs and the legal terminology of torts and personal injury law. Entails an intensive study of various types of torts. Gives the student an overview of tort and personal injury law. Helps the student to develop an understanding of the basic principles of law that apply to personal injury. Hypothetical problems are presented to illustrate how the abstract rules pertain to real life. Gives the student the knowledge to recognize what is a tort and the various types of torts. Students will be able to identify the elements of tort causes of action as well as prepare defenses and review medical records. Legal analysis is stressed through the preparation of case briefs and situational analysis.

PLG 200 Civil Litigation and Procedures 3:3:0:0**Prerequisite or Corequisite(s):** PLG 150; ENG 105; or permission of instructor

Intended to be a follow-up to the Torts and Personal Injury Law course. Enables the student to assist in all aspects of civil litigation, including the drafting of pleadings. Entails an extensive study of pretrial, trial, and post-trial procedures.

PLG 215 Law Office Management 3:3:0:0

Covers the fundamentals of law office management. Designed to familiarize the paralegal with the practical inner workings of a law office, including understanding law office procedures. Law office management goes beyond mere efficiency and productivity and includes being sensitive to ethical concerns and providing quality legal services to clients in an affordable manner. Covers an array of topics that will be encountered in a law office setting.

PLG 220 Contract Law and Business Organizations 3:3:0:0

Prerequisite(s): LCCC English Placement Testing score of 57 or ENG 105 or permission of instructor

Provides paralegal students with an understanding of basic business law concepts. Students will demonstrate knowledge of contracts by drafting various contract clauses and an entire contract. Students will also be required to understand judicial interpretation of the contract principles by completing assignments. Educates paralegal students with regard to business organization and prepares the student to work in the area of corporate law as a paralegal. Gives the students an overview of the laws as well as practical information concerning sole proprietorships, partnerships, and corporations. Students will be required to analyze cases to illustrate the application of laws being discussed. Students will also be required to draft various documents regarding business operations. Warranties, sales, and agency agreements are also reviewed.

PLG 225 The Law of Corporations and Other Business Organizations 3:3:0:0

Prerequisite(s): LCCC English Placement Testing score of 57 or ENG 105

This course will cover the formation, operation, and dissolution of various kinds of business organizations. Subjects covered include: sole proprietorships, corporations, partnerships, and the law of agency and employment agreements.

PLG 227 Criminal Law and Procedures for Paralegals 3:3:0:0

Prerequisite(s): LCCC English Placement Testing score of 57 or English 105 or permission of instructor

This course presents a study of the substantive and procedural aspects of criminal law and the role of the paralegal working in the area of criminal defense or criminal prosecution. Students will study the general principles of criminal liability, analysis of particular crimes, parties to crimes, substantive defense to crimes, and various pleadings relating to criminal law and procedure. Constitutional safeguards and procedures from arrest through trial, sentencing, punishment, and appeal are also studied. This course also examines the ethical considerations relating to criminal law and procedure.

PLG 228 Immigration Law for Paralegals 3:3:0:0

Prerequisite(s): PLG 120 and (PLG 150 or 220)

This course will provide an introductory overview of U.S. immigration law with a focus in the paralegal's role in case assembly, compilation, intake, and processing. Students will learn to identify common issues and available benefits associated with processing nonimmigrant and immigrant visa cases to discuss with the attorney. Students will also gain an overall understanding of both the nonimmigrant and immigrant visa process and U.S. citizenship including the forms, documents, and filing procedures associated with each.

PLG 230 Estates and Trusts 3:3:0:0

Prerequisite or Corequisite(s): LCCC English Placement Testing score of 57 or ENG 105 or permission of instructor

Enables the student to understand the legal principles involved in estate work and to demonstrate the skills necessary to assist in the preparation and completion of all documents incident to estate practice. Includes a coverage of living wills and various types of trusts as well as probate administration.

PLG 235 Family Law 3:3:0:0

Prerequisite(s): LCCC English Placement Testing score of 57 or permission of instructor

Provides the student with a thorough working knowledge of the basics of family law. Covers the essentials of family law and the tasks that a paralegal might perform in an active practice, such as client interviewing and coordinating discovery. Entails a study of the various aspects involved in family law, including marriage, antenuptial agreements, divorce, spousal and child support, property distribution, divorce proceedings, and adoption. Course materials are supplemented by Pennsylvania-specific materials.

PLG 240 Bankruptcy Law 3:3:0:0

Prerequisite or Corequisite(s): LCCC English Placement Testing score of 57 or ENG 105 or permission of instructor

Presents a practical approach to the understanding of bankruptcy law. Familiarizes the student with the bankruptcy code as well as the bankruptcy process. Approaches the bankruptcy process with a practical perspective and hands-on approach featuring research and drafting projects.

PLG 245 Legal Research and Writing 3:3:0:0

Prerequisite(s): ENG 105; PLG 120 and 200; or PLG 215 or 220; or faculty consent or permission of instructor

Involves the understanding of the various sources involved in law. Includes primary and secondary resources. The student will be able to distinguish binding or persuasive law. The student will combine legal research with legal writing by completing problems and preparing a memorandum of law. Legal writing entails case briefing, drafting a memorandum of law, and review of components of legal correspondence. Utilizes the law library at Lehigh County Court of Common Pleas.

PLG 250 Legal Internship 3:3:0:0
 Prerequisite(s): ENG 105, 106; CIS 105; Social Science/ Humanities; Math/Science; PLG 120, 150, 200- with a minimum grade of B in the course, 245- with a minimum grade of C in the course; AOT 118; GPA of at least 2.5; faculty approval required.

Corequisite(s): RES 110, PLG 215, PLG 255
 Provides the student with hands-on experience while working at a law firm, courthouse, bank, or other acceptable locale. The student will work a total of 225 hours at the business during the semester as well as attend meetings to discuss job searching skills. Intended to be taken after a majority of the coursework is completed. Must be pre-approved by the program coordinator according to deadlines established in internship manual. Paralegal Studies students are responsible for locating and selecting internship placement sites. Students are responsible for presenting credential levels required by the internship site. It is the sole discretion of the internship site and future employers as to what level of credentialing is required by the position roles. Students who possess a "record" status may experience limitations in available internship placements and future employment in the paralegal field.

PLG 255 Legal Writing 3:3:0:0
 Prerequisite(s): ENG 105, 106; PLG 120, 200, 245; or permission of instructor
 Legal writing skills are reinforced through various assignments. Students draft case briefs, complaints, answers, discovery demands, motions, and various types of legal correspondence. Legal research is utilized to respond to fact simulation that results in a memorandum of law. Grammar competency is expected.

Philosophy

PHI 201 Introduction to Philosophy 3:3:0:0
 Introduces basic philosophic concepts and methods. Students will gain an understanding of logic and argument, philosophical schools of thought and how philosophy drives historical trends and everyday decisions. Representative selections from the works of leading philosophers will be analyzed to supplement the examination, comprehension and speculation involved in these areas.

PHI 203 Introductory Logic 3:3:0:0
 Includes the study of language as symbols, the analysis of arguments, emotive and non-emotive language, the proper use of deduction and induction, logical fallacies, syllogisms, Venn diagrams, and truth-tables.

PHI 205 Introduction to Ethics 3:3:0:0
 Investigates the theory and practice of ethics and morality. In-depth study of various theoretical perspectives—both Western and Eastern—will precede a study of ethical issues. The issues studied will include those of life and death, equality and discrimination, economic justice and globalization, medical and business ethics, environmental and animal rights, and violence, terrorism, and war.

PHI 210 Comparative Religion 3:3:0:0
 Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and RSS 100 or LCCC Reading Placement Testing score of 94
 Provides an analytical and comparative survey of the major living religions of the world: religions of India (proto-Hinduism, Hinduism, Jainism, Buddhism and Sikhism), religions of the Far East (Confucianism, Taoism, East Asian Buddhism and Shinto) and religions of the Middle East (Zoroastrianism, Judaism, Christianity and Islam) with emphasis on their cultures, mythologies and ethical beliefs.

PHI 260 Independent Study – Philosophy 1–3:1–3:0
 Prerequisite(s): Introductory course in the subject area, minimum GPA of 3.0 in the course subject to be studied, and overall GPA of 3.0, or sufficient evidence of academic strength, and written permission of the instructor and academic dean to justify the independent study.
 Reading, research, and/or experimentation on topic (not otherwise covered in college social sciences curriculum) selected in consultation with a faculty member. Special attention is to be given to the particular abilities and interest of students, with individual guidance for advanced studies. The student may choose: research on selected problems, supervised field studies, reading program, among other alternatives. The course may be a group of students as well as individual study. The course may be repeated for credit. The student is responsible to adhere to the college policies and procedures for independent study.

Physical Education

Physical education courses are oriented toward lifetime and are elective in nature. They may not be repeated for credit.

PED 101 Net Games 1½:1½
 Designed to build basic skill development in the net games: tennis, badminton, table tennis, and volleyball. Students will be instructed in technique, strategy, and knowledge that prepare them for lifetime enjoyment in these selected, viable recreational alternatives.

PED 102 Intermediate Net Games 1½:1½
 Further study of basic skills and strategies of net sports: tennis, badminton, table tennis, and volleyball. Supplements the fundamentals of PED 101 with skill variations and more intricate strategies and knowledge.

PED 110 Conditioning and Aerobics I 1½:1½
 Designed to promote total cardiorespiratory and muscular fitness through aerobic and muscular activity. Healthful benefits are attained as each individual student develops at his or her pace. Each participant will acquire knowledge that will enable them to initiate and maintain a lifetime scientifically based exercise and nutrition program.

PED 111 Conditioning and Aerobics II 1½:1½
 Designed to promote heightened levels of physical fitness for students that initiated their fitness training in PED 110. Conditioning II is based on overload efforts aerobics, muscular toning, and the physiological basis of activity.

PED 115 Outdoor Experience 1½:1½

Students will be exposed to various lifetime outdoor adventure activities that promote enjoyable recreation in our natural environment.

PED 117 Tennis 1½:1½

Students will be instructed in basic techniques, strategies, and knowledge that prepares them for lifetime enjoyment of the sport of tennis.

PED 118 Intermediate Tennis 1½:1½

This course is an extension of the basic skills and strategies presented in PED 117. Fundamentals and additional shot and court coverage are presented for the lifetime sport of tennis.

PED 135 Golf/Volleyball 1½:1½

Students will develop skills in the basic techniques, strategies, and concepts that enable them to enjoyably pursue golf and volleyball.

PED 137 Golf/Bowling 1½:1½

Students will acquire skills and knowledge which will enable them to enjoyably participate in these lifetime recreational activities.

PED 143 Weight Training and Fitness 1½:1½

Acquaints students with proper technique and safety procedures for fitness development with weight training and aerobic activity. The student will plan, implement, and evaluate his/her program.

PED 150 Adapted Physical Education 1½:1½

Individualized student-teacher relationship designed for individuals who have limitations that disallow participation in the standard physical education curriculum. Students desiring this personalized instruction require teacher approval prior to registration and a doctor's statement of disability.

PED 155 Volleyball/Softball 1½:1½

The basic skills of volleyball and softball are presented to enable students the opportunity for lifetime recreational enjoyment. Techniques, strategy, and rules are covered in the presentation.

PED 160 Karate/Self-Defense I 1½:1½

Basic introduction in the fundamentals of self-defense. Mental discipline and basic philosophies of the martial arts will be incorporated.

PED 161 Karate/Self-Defense II 1½:1½

This course provides reinforcement of the fundamentals of Karate/Self Defense I skills and competencies and encourages the development of advanced self-defense skills. Introduction of mental discipline and basic philosophies of the martial arts will be presented.

PED 165 Introduction to Yoga 1½:1½

This course is a hatha yoga presentation striving for improved physical fitness, vitality, and relaxation through various asanas (postures).

PED 166 Intermediate Yoga 1½:1½

This course is concerned with the continued development of skills introduced in PED 165. Review and refinement of beginning level yoga exercises will be emphasized. Additional exercises will be added as students demonstrate proficiency.

Physical Therapist Assistant

Admission to these courses requires admission into the Physical Therapist Assistant program or permission of the program director.

PTA 101 Introduction to Physical Therapy 3:3:0:0

Corequisite(s): PHY 103; BIO 163

This is a general survey of the field of physical therapy and its role in the healthcare system. Students are introduced to the types of procedures utilized in physical therapy, the organization of a physical therapy department, and the types of patients treated with physical therapy. Professional ethics, legal aspects, the healthcare team, financing the healthcare system, and the relationship of physical therapy to other health services is reviewed. Students learn selected medical abbreviations, medical terminology, and origins, insertions, innervations, and actions of select muscles. Students visit two different types of physical therapy departments. They also spend a day in a wheelchair. The role of the physical therapist assistant and working relationship between the physical therapist and the physical therapist assistant will be stressed throughout the course.

PTA 102 Applied Kinesiology 3½:3:2:0

Prerequisite(s): BIO 163; PTA 101; PHY 103

Corequisite(s): PTA 103, 201

The basic mechanics of human movement are covered, including the effects of gravity, anatomical levers, and the arrangement and types of muscle fibers. The types of joints in the body, the movements possible in each joint, how to demonstrate each movement, and how to identify and measure the movement on another person are covered. Coordination of muscle activity to produce precision of movement through various types of muscle contraction is studied. The student will learn the origins, insertions, innervations, and actions for each individual muscle, and how muscle groups work together to produce joint actions. The use of good body mechanics is taught and stressed throughout the course. The characteristics of human locomotion are examined and the muscles that produce the motions are identified. The technique for measuring, adjusting, and teaching the use of ambulation aids is taught and practiced. The student learns simple measurement of joint range of motion, gross manual muscle testing, and safe methods of transferring patients. Documentation of patient posture, goniometry, muscle tests, transfers, and ambulation is done. Oral communication to the physical therapist, physician, and other healthcare workers is practiced. Written instructions on patient transfers and ambulation are reviewed for use by patients and their families. Students are expected to attend three hours of supervised open laboratory sessions per week to develop proficiency in the application of the procedures through self-directed learning.

PTA 103 Physical Therapy Procedures I**3:2:3:0****Prerequisite(s):** PTA 101; PHY 103; BIO 163**Corequisite(s):** PTA 102, 201

The student will learn principles of treatment common to all physical therapy procedures. They will also have the opportunity to develop entry-level skill in the safe application of massage, moist heat packs, elastic bandages, paraffin, infrared, ultraviolet, intermittent compression, cold applications, hydrotherapy, wound management, and cervical and pelvic traction. Students will also learn how to assess vital signs and identify normal values for each of them. Documentation for vital sign assessment as well as each procedure is practiced in a SOAP note format. Students must also be able to write home instructions for assessing pulse as well as for performing various physical modalities by the patient or the family. Oral communication is also practiced for these procedures with a variety of mock patient populations as well as the physical therapist and physician. Students will also be able to identify and explain ethical principles, indications, contraindications, precautions, and effects for each modality presented. Reimbursement and billing issues regarding the use of physical modalities are discussed. Students are taught how to follow plans of care initiated by the physical therapist, and how and when to communicate with the physical therapist, physician, and other healthcare workers about a patient's status, progress, and plans for discharge. Safety procedures, infection control procedures, and precautions will be stressed throughout the course. Students are expected to attend open laboratory sessions three hours per week to develop proficiency in the application of the procedures through self-directed learning.

PTA 200 Selected Topics in Physical Therapy**2:2:0:0****Prerequisite(s):** PTA 101, 102, 103, 201; PHY 103; BIO 163, 164**Corequisite(s):** PTA 202, 203, 205, 206

This course is designed to provide students with an introduction to current treatment theories and interventions for specific patient populations often encountered in specialized physical therapy practices. Specific areas to be covered will include pediatric physical therapy, sports medicine, and geriatric rehabilitation. Additional topics may be included at the instructor's discretion to ensure that students are kept current with the evolving field of physical therapy. The student will be introduced to common theories of practice and diagnoses specific to these patient populations as well as unique considerations of practice in these specialized areas.

PTA 201 Medical-Surgical Orientation to Clinical Practice**3½:3:0:0****Prerequisite(s):** BIO 163; PTA 101; PHY 103**Corequisite(s):** PTA 102, 103

This course offers the student an introduction to the basic causes of disease most commonly treated by physical therapy. The clinical methods and basic laboratory tests used to make a diagnosis are discussed. Disturbances in blood flow, derangements of body fluids, inflammation and repair, common pathogenic microorganisms, and general principles to promote healing are studied. The cause, clinical signs and symptoms, pathophysiology, treatment, and prognosis of a variety of diseases commonly encountered by the physical therapist assistant (PTA) are covered. The importance of proper medical documentation is reviewed and students are instructed in SOAP format of note writing for the medical chart. Medical ethics in the ever changing healthcare arena are discussed. Students are required to complete 28 hours of clinical experience as part of this course and submit a literature-based research paper about their clinical experience and the patient diagnoses encountered during that experience.

PTA 202 Clinical Practice I 1:0:0:42 (per semester)**Prerequisite(s):** PTA 101, 102, 103, 201; BIO 163, 164; PHY 103; ENG 105, 106; PSY 140; SOC 150**Corequisite(s):** PTA 200, 203, 205, 206

Students apply knowledge and skills gained in lecture and laboratory to patients in clinical settings at a beginning level under the guidance and supervision of licensed physical therapists. Students spend six half days in each of two different physical therapy settings, for a total of 12 half-day experiences. The sites for the clinical assignments include acute care hospitals, skilled nursing facilities, outpatient physical therapy settings, pediatric facilities, and rehabilitation hospitals, and the clinical instructors may be physical therapists or physical therapist assistants. Additionally, students are required to write a resume, a book report, and attend an orientation program and an end-of-semester seminar. To register for this course, students must pass a written and practical exam to be certified in cardiopulmonary resuscitation at the healthcare provider level, including infant and adult airway foreign body airway obstruction, adult and infant one rescuer CPR, adult two rescuer CPR, and the use of an automatic external defibrillator.

PTA 203 Physical Therapy Procedures II **3:2:3:0**

Prerequisite(s): PTA 101, 102, 103, 201; BIO 163, 164; PHY 103

Corequisite(s): PTA 200, 202, 205, 206

The students have the opportunity to learn theory and develop entry-level skills to safely apply E.M.G. biofeedback, diathermy, ultrasound, therapeutic electricity, combined ultrasound and electrical stimulation, and chest physical therapy under the supervision of a physical therapist. The management of pain and inflammation through the use of modalities is covered. Electrophysiologic evaluations and low-power lasers are discussed. In addition, the students have the opportunity to conduct a computerized literature research and perform an oral presentation during class. Safety procedures, precautions, and legal and ethical implications will be stressed on all procedures throughout the course. Students practice documenting progress notes regarding patient care and instructions for use of some of the modalities at home. Oral communication with patients and families with diverse backgrounds is discussed. Reimbursement and billing issues regarding the use of physical modalities is presented. Students are taught how to follow plans of care initiated by the physical therapist, and how and when to communicate with the physical therapist, physician, and other healthcare workers about a patient's status, progress, and plans for discharge. Students are expected to attend three hours of open laboratory sessions each week to help develop proficiency in their skills by working in a self-directed manner.

PTA 205 Therapeutic Exercise **4:3:3:0**

Prerequisite(s): PTA 101, 102, 103, 201; PHY 103; BIO 163, 164

Corequisite(s): PTA 200, 202, 203, 206

The student learns the basic types of exercises used in physical therapy and how to apply or teach them to another person. The use of mechanical exercise equipment and specific exercise routines for disabilities are taught. Stressed throughout the course is how to recognize when a person is doing an exercise procedure correctly and the signs of overdosage. How to properly protect a patient who is doing exercise is also taught. The proper use of good body mechanics for both the student and the patient is emphasized throughout the course. The student will learn the rationale, indications, contraindications, and effects for all the procedures covered. The student is also introduced to basic exercise procedures used to facilitate human movement. Goniometry, gait-training, and patient transfers are reviewed and included in patient problems. Ethical and safety principles are stressed throughout the course. Students are taught how to follow plans of care initiated by a physical therapist and how and when to communicate with the physical therapist, physician, and other healthcare workers about the patient's status, progress, and plans for discharge. Students practice documenting in a patient's record. They also practice writing instructions for exercises to be done by the patient or family at home. Oral communication with patients and families with diverse backgrounds is discussed. Third-party payer and legal issues regarding therapeutic exercises are discussed. Students also develop and lead the class through a group exercise program. Students are expected to attend three hours of open laboratory sessions each week to develop proficiency in their skills by working in a self-directed manner.

PTA 206 Rehabilitation **3½:3:2:0**

Prerequisite(s): PTA 101, 102, 103, 201; PHY 103; BIO 163, 164

Corequisite(s): PTA 200, 202, 203, 205

This course will expose the student to assessment of normal human motion and its application to functional activities of daily living as a basis for educating and retraining individuals with a variety of physical and cognitive disabilities. Normal human developmental sequence, reflexes, equilibrium, and righting reactions are studied as a framework for understanding development of normal human motor control. Elements of human locomotion and identification of common gait deviations and their most common causes will be studied. Rehabilitative management of individuals with amputations, cardiac dysfunction, spinal cord injuries, cerebrovascular accidents, traumatic brain injuries, and a variety of neurological, muscular, orthopedic and rheumatological disorders will be discussed. Special needs and concerns of the geriatric patient will also be reviewed. The use of adaptive equipment, including wheelchairs, orthotic, and prosthetic devices, will be reviewed as they relate to improving functional abilities of patients with selected disabilities. Architectural barriers, psychological adjustment to disability, and ways of handling a patient coping with a disability will be discussed. Students will be required to write a clinical-based research paper on a specific patient disability covered in this course. Ethical principals and safety are stressed throughout the course. Students are taught how to follow plans of care initiated by the physical therapist and how and when to communicate with the physical therapist, physician, and other healthcare workers regarding the patient's progress and plans for discharge. Oral communication with patients and families with diverse backgrounds is discussed. Students will practice medical record documentation. Third-party payer, medical insurance issues, and medical-legal issues will also be discussed. The laboratory skills portion of the class provides an opportunity for learning hands-on skills as applicable to selected physical disabilities. Students are expected to attend three hours of open laboratory sessions each week to develop proficiency in their skills by working in a self-directed manner.

PTA 208 Clinical Practice II **12:4½:0:7½**

Prerequisite(s): PTA 101, 102, 103, 201, 202, 203, 204, 205, 206; BIO 163, 164; PHY 103, ENG 105, 106; PSY 140; SOC 150

Clinical training will provide learning experiences for the physical therapist assistant student in departments of physical therapy under the guidance and supervision of licensed physical therapists. The student will be provided with opportunities to apply the newly acquired skills in treatment programs as assigned by the clinical supervisor while spending at least seven full weeks in each of two different physical therapy settings, for a total of at least 14 weeks of clinical practice. This clinical experience will include treatment of patients common to general hospitals, extended care or nursing facilities, outpatient physical therapy settings, and rehabilitation hospitals. Students are required to write a resume, construct a patients education brochure, and prepare and present an in-service presentation to physical therapy staff members and the college community. Attendance at an introductory orientation session, an open laboratory, and a program

seminar is mandatory. To register for this course, students must pass a written and practical exam to be certified at the healthcare provider level in cardiopulmonary resuscitation, including infant and adult airway foreign body airway obstruction, adult and infant one rescuer CPR, adult two rescuer CPR, and the use of an automatic external defibrillator.

Physics

PHY 101 Conceptual Physics 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 099 or MAT 100 or LCCC Algebra Placement Testing score of 77
Provides, for the nonscience student, a base from which to view nature in a conceptual rather than mathematical way and to see that surprisingly few relationships make up the rules of nature. For the science student, it can lay the foundation for further studies in physics.

PHY 103 Fundamentals of Physics 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or LCCC Algebra Placement Testing score of 77
This course is for allied health students and non-science majors. Basic areas of study are mechanics, properties of materials, heat, waves and electricity with practical applications to everyday life and the human body. Mathematical techniques are developed as needed, and occasionally computers are used to obtain data.

PHY 110 Elements of Physics 4:3:3:0

Prerequisite(s): MAT 105 (at least a "C") or LCCC Algebra Placement Testing score of 119
Primarily for technical students requiring one semester of physics and for students to meet a general science requirement, this course provides the student with basic concepts of physics. Areas of study include mechanics, properties of matter, heat, waves, and electricity and magnetism. Technical applications are cited. Computers are frequently used in lab for data acquisition and analysis.

(Note on the background required: The prerequisite for this course is a minimum of COMPASS-Algebra 49 or MAT 105 Intermediate Algebra with a minimum grade of C. For students in Aviation and Professional Pilot and transmission and distribution technology-priority classes, the study of vectors is included. Application of the trig functions sine, cosine and tangent is required of them.)

PHY 201 Introduction to Physics I 4:3:3:0

Prerequisite(s): MAT 130 or MAT 165 (at least a "C") or LCCC Algebra Placement Testing score of 129
A non-Calculus-based survey of classical mechanics and heat for students requiring a two-semester algebra-based physics sequence. Topics studied include rectilinear motion; vectors and projectile motion; Newton's laws of motion; work and energy; impulse, momentum, and collisions; circular motion and rotational dynamics; temperature; calorimetry; heat transfer; kinetic theory of gases; and thermodynamics. Computers are frequently used in lab for data acquisition and analysis.
(Note on background required: This course is an algebra-

based physics course that is the first course in a two-semester sequence. A basic working knowledge of algebra and the application of the trig functions sine, cosine and tangent are necessary for success in this course. This course is designed for the student who typically needs a two-semester sequence in physics that does not include the use of calculus.)

PHY 202 Introduction to Physics II 4:3:3:0

Prerequisite(s): PHY 201 (at least a "C")
This continuation of the algebra-based physics sequence includes major topics of wave motion; sound; reflection and refraction of light; mirrors, thin lenses and optical instruments; interference and diffraction; electric fields; potential difference, current, resistance, and capacitance; DC and AC circuits; magnetic fields and forces; electromagnetic induction; and nuclear decay and half-life. Computers are frequently used for data acquisition and analysis.

(Note on background required: This course is an algebra-based physics course that is the second course in a two-semester sequence. A basic working knowledge of algebra and the application of the trig functions sine, cosine, and tangent are necessary for success in this course. This course is designed for the student who typically needs a two-semester sequence in physics that does not include the use of calculus. The course is appropriate for technical students and generally for students who plan to transfer who need a two-semester noncalculus-based physics sequence.)

PHY 210 General Physics I 5:4:3:0

Prerequisite(s): MAT 191 (at least a "C")
This Calculus-based Physics course provides an in-depth study of mechanics and heat. Major topics in mechanics are measurement, vectors, friction, equilibrium of a particle and a rigid body, description of motion in a straight line and in a plane, Newton's laws of motion and universal gravitation, work and energy, momentum, and elastic properties of solids. Major topics in heat are temperature and expansion, heat measurements, heat transfer, thermodynamics, and kinetic-molecular theory. The laboratory supports the theory and emphasizes experimental techniques and error analysis. Computers are used extensively in the laboratory for data acquisition and analysis.

PHY 215 General Physics II 5:4:3:0

Prerequisite(s): PHY 210 (minimum grade of "C"); MAT 196 (minimum grade of "C")
This continuation of the Calculus-based Physics sequence includes an in-depth study of electricity and magnetism, waves, sound, and light, and selected topics in modern physics. Major topics studied in electricity and magnetism are Coulomb's Law; electric field and potential; capacitance; electric current, resistance, and electromotive force; direct current circuits and instruments; magnetic fields and forces; induced emf; inductance; alternating current circuits; and electromagnetic waves. The study of waves and sound includes the mathematical description of waves and acoustical phenomena. The study of light includes both geometric and physical optics. Special topics in modern physics include quanta, the nucleus, and nuclear decay and transformations. The laboratory supports the theory and provides a great range in experimental techniques. Computers are used for data acquisition and analysis when appropriate.

PHY 250 Selected Topics in the Natural Sciences 1:1:0:0

Prerequisite(s): BIO 110 and CHE 111, or permission of instructor

An interdisciplinary science course designed to introduce students to various topics within the natural sciences. Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme: transcripts will list the second enrollment as BIO/CHE/PHY 251.

PHY 251 Selected Topics in the Natural Sciences 1:1:0:0

Prerequisite(s): BIO/CHE/PHY 250

An interdisciplinary science course designed to introduce students to various topics within the natural sciences. Topics will be selected at the instructor's discretion and generally vary each semester. Possible themes include the human genome project, string theory, stem cell research, history of science, endocrine disruption, global environmental issues, fad diets, Nobel laureates, genetically engineered products, human sexuality, quantum mechanics, or issues in pharmacology. Students may repeat this course for credit, provided that they do not enroll in semesters featuring the same theme: transcripts will list the second enrollment as BIO/CHE/PHY 251.

Political Science

PSC 130 Introduction to Political Science 3:3:0:0

Considers philosophy and development of contemporary political ideologies. Institutions of modern governments are compared and analyzed. Philosophical, behavioral, institutional, and historical approaches to the study of political science are examined to study the discipline as a science.

PSC 141 American Federal Government 3:3:0:0

Functions of the United States government under the Constitution are stressed to illustrate the federal concept of government. Included are problems and advantages of federalism; civil liberties and civic responsibilities; political parties; the three branches of government; the increasing activities of the national government; and a comparison and contrast of the American governmental system with contemporary foreign governments.

PSC 142 State and Local Government 3:3:0:0

Study of the organization and functions of state and local governments (as exemplified in Pennsylvania) and their place in our federal system. Topics studied include state, county, township, borough, and city governments; metropolitan cooperative/consolidation efforts; special purpose districts; and the contributions that active citizens can make in their state and communities.

PSC 233 Introduction to Public Administration 3:3:0:0

Prerequisite(s): ENG 100 or LCCC Placement Testing score of 57.

This course will introduce the student to the theory, context, scope, and contemporary practice of public administration. The student will survey and become familiar with theories of organization, the statutory authority for administrative decision-making, the historical development of public administration in the United States, the policy-making process, and practical planning tools for the practice of public administration. Students considering a career in public administration, or those who might already hold a position and would like a deeper understanding of the field would benefit from this course.

PSC 235 Constitutional Law 3:3:0:0

Examines the Supreme Court of the United States as the interpreter of our Constitution, and as a participant in the governing process. Emphasis on decisions relative to due process and the criminal justice system. Included are the development and current application of decisions affecting criminal law and procedures, plea bargaining, juvenile procedures, the corrections system, and the traditional Constitutional areas, such as speech and religion.

PSC 236 American Civil Liberties 3:3:0:0

American civil liberties are reviewed via Constitutional decisions of the United States Supreme Court. Examined are due process, religious freedom, racial and sex discrimination, obscenity, and equal protection of the law. Emphasis on recent court decisions.

PSC 237 International Relations 3:3:0:0

This course will provide students with an overview of the field of international relations. Beginning with a historical survey of international relations, the course will then analyze issues related to security, the world economy and social issues. The implications of recent developments such as the end of the Cold War, European Integration, crises in the Middle East, and other major international issues will be analyzed.

PSC 239 U.S. Foreign Policy 3:3:0:0

A study of the policy choices, regional and global issues, and trends facing the United States in the contemporary international system. Included is an examination of the nature of international policy formation and its principles, as well as an overview of the history of U.S. foreign policy. Major emphasis is placed on U.S. involvement in world affairs since World War II, always viewed in its current context.

PSC 260 Independent Study—Political Science 1–3:1–3:0:0

Prerequisite(s): Introductory course in the subject area, minimum GPA of 3.0 in the course subject to be studied, and overall GPA of 3.0, or sufficient evidence of academic strength, and written permission of the instructor and academic dean to justify the independent study.

Reading, research, and/or experimentation on topic (not otherwise covered in college social sciences curriculum) selected in consultation with a faculty member. Special attention is to be given to the particular abilities and interest of students, with individual guidance for advanced studies. The student may choose: research on selected problems, supervised field studies, reading program, among other alternatives. The course may be a group of students as well as individual study. The course may be repeated for credit. The student is responsible to adhere to the college policies and procedures for independent study.

Practical Nursing

Enrollment in any NUR course requires full admission to the Practical Nursing program.

NUR 106 Nursing I 11:7:3:255

Corequisite(s): BIO 163; PSY 140

Introduction to the profession of nursing with an emphasis upon the nursing process, teaching-learning concepts, and the expectations and responsibilities of the practical nurse. Students study the basic human needs of individuals and the effects of illness upon the adult patient, the family, and the community. Basic nursing skills are developed that enable students to care for individuals, families, and communities. Nutrition, therapeutic communication, asepsis, and care of the operative patient concepts are presented within the course. Ethical, legal, cultural, and spiritual responsibilities of nursing care are introduced. Nursing concepts are reinforced and applied through clinical laboratory experience in an extended care facility and/or a general hospital.

NUR 116 Nursing II 11:7:3:255

Prerequisite(s): NUR 106; BIO 163; PSY 140

Corequisite(s): BIO 164; PSY 145 or ECE 120

Students study the nursing care required by patients with acute and chronic medical-surgical conditions across the lifespan. Use of therapeutic communication skills and the nursing process offer a foundation for the implementation of nursing care provided for individuals, families, and groups. Study of basic principles of pharmacology provides a foundation for subsequent administration of drug therapy. Ethical, legal, cultural, and spiritual aspects of nursing care are reinforced. The teaching-learning process in the role of the practical nurse is further explored. Application of nursing concepts is achieved through clinical laboratory experience in a general hospital and in selected community agencies.

NUR 126 Nursing III 12:10:0:270

Prerequisite(s): NUR 106, 116; BIO 163, 164; PSY 145 or ECE 120; PSY 140

Corequisite(s): SOC 150 or 151

Students explore the nursing concepts pertinent to the birth process. Use of the nursing process in caring for patients with more complex acute and chronic medical-surgical conditions across the lifespan is continued. Principles of pharmacology and medication administration are integrated throughout the course. Psychosocial adaptation of individuals, families, and groups is emphasized. Ethical, legal, cultural, and spiritual aspects continue to be part of nursing care. The teaching-learning process continues to be demonstrated. Students focus on the leadership and role responsibilities of the practical nurse as a contributing member of the healthcare team. Application of therapeutic communication skills and the nursing process is achieved through clinical laboratory experiences in a general hospital and in selected community agencies.

Professional Pilot

Courses for the Professional Pilot degree are listed under "Aviation."

Psychology

PSY 105 Psychology as a Major 1:1:0:0

Corequisite(s): PSY 140

Psychology continues to grow as a major. Given the broad nature of career opportunities, it is vital for students to understand the field to make informed decisions regarding their career and future education. An overview of the major is discussed in addition to various careers in psychology including human services, counseling and research. Students are introduced to various resources available to them as psychology majors, along with learning valuable study skills for psychology courses. A plan for future study and interests is accomplished based on the cumulative information from the semester.

PSY 106 Writing in APA Style 1:1:0:0

Prerequisite(s): ENG 100 or LCCC English Placement

Testing score of 57

This course offers information about writing in APA style. The basic components of a research paper are reviewed. Students learn how to cite in-text and in a reference list and how to format a paper in APA style, including figures and tables. Issues relating to writing style in APA will also be discussed.

PSY 109 Reading and Understanding Research 1:1:0:0

In most social science professions it is important to identify, read, evaluate, and understand research studies. This course provides students a foundation for reading and reviewing research. Using library and internet resources, students will formulate a research strategy, develop search skills, and evaluate sources.

PSY 120 Psychology of Human Sexuality 3:3:0:0

This course offers a comprehensive overview of human sexual behavior from a biopsychosocial perspective. This course will emphasize both quantitative and qualitative psychological research and theory on human sexuality and also consider the biological, evolutionary, social, and cultural factors that influence our sex lives. Students will critically evaluate sexual health education programs in a variety of settings (school and community) and understand key issues in sexual health promotion.

PSY 140 Introduction to Psychology 3:3:0:0

This introductory course will provide students with an overview of the current body of knowledge and methods of the science of psychology. With an emphasis on empirical examination, the course focuses on the historical and contemporary foundations of psychology, cognition, emotions, learning, memory, consciousness, human development, biological bases of behavior, personality, psychological disorders, therapy, and social behavior. Emphasis will be placed on the application of psychology to diverse human endeavors and on students' ability to recognize and cope with uncertainty and ambiguity in human behavior.

PSY 142 Industrial Psychology 3:3:0:0

This course is designed to provide an overview of industrial/organizational (I/O) psychology, I/O psychology is a subfield of psychology concerned with various aspects of people in the workplace, including employee productivity and well-being. The “industrial” part deals with personnel functions, such as analyzing jobs, appraising employee performance, selecting, placing, and training employees. The “organizational” part is concerned with the social and psychological aspects of work, including employee attitudes, behavior, emotions, health, motivation, leadership, and group dynamics. Both real-world applications and research will be emphasized throughout the course.

PSY 145 Human Growth and Development–The Life Span 3:3:0:0

Prerequisite(s): PSY 140

Overview of development throughout the entire life cycle. Developmental themes that emerge in and across different stages of life, including physical cognitive, social, and emotional factors, are surveyed. The role of heredity, culture, personal experience, and the environment are discussed.

PSY 240 Educational Psychology 3:3:0:0

Prerequisite(s): PSY 140

This course examines the human development and learning theories as they apply to teaching and the learning process. The course focuses on the classroom application of psychological theories and research in the areas of human development, psychosocial influences, learning, motivation, educational environment, and assessments.

PSY 242 Child Development 3:3:0:0

Prerequisite(s): PSY 140

In this course we will explore the many dimensions of development of children from conception through middle childhood within the context of the family and culture. The physical, cognitive, emotional, and social aspects of development are studied. There is an emphasis on prevailing theories and recent research and a major thrust on understanding how that impacts the child in the family, school, and community. The impact of family and child rearing beliefs, gender issues, and language development are discussed as they relate to developmentally based practices.

PSY 243 Abnormal Psychology 3:3:0:0

Prerequisite(s): PSY 140

An introduction to the study of abnormal human behavior. Using a multicultural approach, students will examine the characteristics, etiology, and treatment of the major categories of disorders. The course will also address the research methodologies used in studying these disorders and their treatments as well as the legal and ethical issues in abnormal psychology.

PSY 250 Cognitive Psychology 3:3:0:0

Prerequisite(s): PSY 140

This course is designed to provide a general understanding into the main areas of cognitive psychology including but not limited to: memory, attention, language, knowledge, creativity, and problem solving. It will explore the functional and relevant aspects of the main areas of cognitive psychology, along with their histories. The course will also examine how Cognitive Psychologists employ the scientific method when conducting empirical cognitive-based research. This exploration will allow students to compare and contrast the validity of various cognitive theories. This course will also explore the biological basis of behavior and mental processes as related to cognition. Further, the course will describe the main processes that serve as the foundations of consciousness as well as how these processes relate to a neurological basis for awareness, decision making and behavior.

PSY 255 Introduction to Statistical Analysis 4:3:3:0

Prerequisite(s): PSY 140, MAT 105

Introduces the student to the concepts of descriptive and inferential statistics. Research needs to be summarized by appropriate descriptive statistics such as central tendency, variability, and distributions. Relationships will be studied using correlation, regression, chi-square, and other non-parametric tests. Research also needs to be analyzed by appropriate inferential statistics such as t-tests and analysis of variance (ANOVA). Hypothesis testing, sampling, significance levels, type I errors, type II errors, confidence intervals, and power will be discussed. The student will be introduced to SPSS and/or other appropriate software for performing the descriptive and inferential statistical procedures presented in the course. The approach will be on practical considerations not theoretical issues.

PSY 256 Research Methods in Psychology 4:3:3:0

Prerequisite(s): PSY 140, PSY 255

Introduces students to the philosophy of science and to the strategies of scientific inquiry, and to the skills involved in understanding, analyzing, and conducting psychological research. The course will cover a range of quantitative and qualitative methods including experiments, field studies, naturalistic observation, participant observation, surveys and polls, case studies, unobtrusive measurement, historical and descriptive research, program evaluation, meta-analysis, and quasi-experimental approaches. The course will consider research issues such as ethics, sampling, control, measurement, methodological constraints, and the presentation of a completed study.

**PSY 260 Independent Study–
Psychology 1–3:1–3:0:0**

Prerequisite(s): Introductory course in the subject area, minimum GPA of 3.0 in the course subject to be studied, and overall GPA of 3.0, or sufficient evidence of academic strength, and written permission of the instructor and academic dean to justify the independent study.

Reading, research, and/or experimentation on topic (not otherwise covered in college social sciences curriculum) selected in consultation with a faculty member. Special attention is to be given to the particular abilities and interest of students, with individual guidance for advanced studies. The student may choose: research on selected problems, supervised field studies, reading program, among other alternatives. The course may be a group of students as well as individual study. The course may be repeated for credit. The student is responsible to adhere to the college policies and procedures for independent study.

**PSY 283 Introduction to
Social Psychology 3:3:0:0**

Prerequisite(s): PSY 140; SOC 150

Offers a broad introduction to social psychology, the scientific study of human social influence and interaction. The various ways people think about, effect, and relate to one another will be a major emphasis. Topics within social cognition, social perception and social influence include social self-concept, social judgment, attitudes, persuasion, psychology explanations for social influence and interaction. Research methodologies commonly used in the discipline will be emphasized through empirical findings.

Reading and Study Skills**RSS 099 Basic Skills Reading 3:3:0:0**

Prerequisite(s): LCCC Reading Placement Testing score of 79.

This course is designed to develop and strengthen the reading comprehension of students who intend to pursue a college program of study, but who need serious and sustained remediation of their reading for more than one semester to prepare for the demands of reading-based college courses. Students are required to complete reading lab assignments regularly throughout the semester and keep appointments with reading lab instructors.

RSS 100 Critical Reading 3:3:0:0

Prerequisite(s): LCCC Reading Placement Testing score of 79 up to 93 or grade of “R” in RSS 099

Designed to increase effectiveness in college reading and related study activities. Special attention is given to improving comprehension of a wide variety of college-level reading materials through critical reading and metaphoric thinking.

RSS 101 Effective Study Skills 1:3:0:0

Designed to teach effective study skills. Topics include adjusting to college, listening and note taking, time management, reading and marking a textbook, test taking, and effective study habits. Skills will be taught utilizing content course materials. The course is especially appropriate for returning adults and for students who wish to strengthen study skills.

RSS 102 The College Experience 1:1:0:0

Designed to establish a connection between students and LCCC's campus and resources. Topics will include self-awareness, goal setting, organization and time management, academic planning, library orientation, student life, diversity, and wellness.

RSS 103 Vocabulary Improvement 1:1:0:0

Designed to increase vocabulary so that a student may function independently in college courses. Because of the positive correlation between a powerful vocabulary and academic success, students will be given the opportunity to increase their vocabulary through dictionary work, thesaurus exercises, analogies, and contextual and etymological studies. Attention will be given to learning words through word structure and to the development of a technical vocabulary. Memory strategies will be included.

RSS 104 Student Success 3:3:0:0

Designed to enhance student success by providing an opportunity for students to learn and adopt methods that promote effectiveness in academic and nonacademic pursuits. Academic survival skills, such as note taking, listening, textbook study strategies, time management, concentration, motivation, and test-taking, will be taught with an emphasis on their application to course work in other disciplines. In addition, the course promotes development of life-management skills, such as stress management, leadership, effective communication, and career planning.

RSS 106 Math Study Skills 1:2:0:0

Designed to provide effective study strategies to improve the student's learning experiences in math. Lessons focus on the development, by the student, of an individual, unique system of math study skills that can be used from one math course to the next. In addition, the students will explore the development of the necessary affective characteristics of successful math students; more specifically, strategies and tools to overcome math or math test anxiety and to acquire a stronger, more positive self-perception as capable students.

**RSS 201 Adult Literacy Tutor
Training 3:3:0:0**

Designed to provide literacy tutors with training in the areas of instructional methods, diagnosis, materials selection, record keeping, and lesson planning, as well as teaching students with special needs such as English as a Second Language (ESL), learning disabilities, Adult Basic Education, and GED preparation. In addition, course participants are required to apply their newly acquired skills through supervised literacy tutoring four hours per week.

Real Estate

RES 110 Real Estate Law 3:3:0:0

Provides a basic knowledge of real estate law. Studied are court decisions as well as state and national law concerning various legal aspects of the exchange of real estate. A student must attend 80% of the class for the course to be used as credit to take the State Licensing Examination.

Science

SCI 105 Integrated Science 4:3:3:0

Prerequisite(s): ENG 100 or LCCC English Placement Testing score of 57 and LCCC Reading Placement Testing score of 94 and MAT 090 or MAT 099 or MAT 100 or LCCC Algebra Placement Testing score of 77
This non-majors course brings together important concepts from several scientific fields, including astronomy, biology, chemistry, and physics, and provides a basis for understanding how our physical world works. Topics range from the atomic structure of matter, physical laws, and the structure of the universe, to cell theory, the environment, and evolution.

SEED

EED 080 Introduction to Essential Skills SEED 1 7½:0:0:565

The Success, Engagement, Education, Determination course provides comprehensive training for individuals with disabilities who might not otherwise have an opportunity to have a college experience, to master skills in transition, academic, and/or career areas. Instruction is provided in independent living, socialization, soft skills, and technical skills. The course works with students ages 18 and older through individualized programming to achieve the skills necessary for competitive employment. Through person centered planning, peer mentoring, career/soft skills training, club/social activities, career coaching, and work-based experiences; a student graduates with a certificate of completion for technical skills achieved. A student must start in the Summer Bridge program prior to entering the SEED Fall semester.

EED 081 Career/Academic Skills Part One SEED 2 7½:0:0:565

Prerequisite(s): EED 080
The Success, Engagement, Education, Determination course provides comprehensive training for individuals with disabilities who might not otherwise have an opportunity to have a college experience, to master skills in academic, and/or career areas. Instruction is provided in independent living, socialization, soft skills, and technical skills. The course works with students ages 18 and older through individualized programming to achieve the skills necessary for competitive employment. Through person centered planning, peer mentoring, career/soft skills training, club/social activities, career coaching, and work-based experiences; a student graduates with a certificate of completion for technical skills achieved.

EED 082 Career/Academic Skills Part Two SEED 3 7½:0:0:565

Prerequisite(s): EED 081
The Success, Engagement, Education, Determination course provides comprehensive training for individuals with disabilities who might not otherwise have an opportunity to have a college experience, to master skills in academic, and/or career areas. Instruction is provided in independent living, socialization, soft skills, and technical skills. The course works with students ages 18 and older through individualized programming to achieve the skills necessary for competitive employment. Through person centered planning, peer mentoring, career/soft skills training, club/social activities, career coaching, and work-based experiences; a student graduates with a certificate of completion for technical skills achieved.

EED 083 Transition Skills SEED 4 7½:0:0:565

Prerequisite(s): EED 082
The Success, Engagement, Education, Determination course provides comprehensive training for individuals with disabilities who might not otherwise have an opportunity to have a college experience, to master skills in transition. Instruction is provided in independent living, socialization, soft skills, and technical skills. The course works with students ages 18 and older through individualized programming to achieve the skills necessary for competitive employment. Through person centered planning, peer mentoring, career/soft skills training, club/social activities, career coaching, and work-based experiences; a student graduates with a certificate of completion for technical skills achieved.

Sociology

SOC 150 Introduction to Sociology 3:3:0:0

Prerequisite(s): LCCC Reading Placement Testing score of 94 or successful completion of RSS 100; LCCC English Placement Testing score of 57 or a 490 on the critical reading SAT or successful completion of ENG 100 or ESL 250

Sociology studies how we define our social world, create and learn rules for interacting with one another, establish and maintain institutions such as the family, school, and church, divide and distribute work and wealth among ourselves, struggle for power and prestige, and adjust to new ideas and technologies. This course introduces students to the conceptual tools needed to explore these issues and to develop a critical understanding of the social world.

SOC 151 Modern Social Problems 3:3:0:0

Prerequisite(s): LCCC Reading Placement Testing score of 94 or successful completion of RSS 100

This course offers a sociological approach to the study of social problems. Students will examine how a problem comes to public attention, how it is defined, how data are used or misused in the presentation of a problem, and how political ideology affects what solutions are offered for a problem. Course materials will give special attention to the role of the media in highlighting certain problems and in shaping an audience's perspective on those problems. Students will investigate the social-structural conditions that produce particular problems and explore the ways in which a variety of problems are connected to one another. They will look at the political and economic interests that are tied to those social structures and consider how those interests affect policy. Throughout the course, students will evaluate "solutions" put forward by various advocates and agencies and identify ways in which individuals can become involved in shaping policy debates and/or taking political action. The particular problems addressed will vary, but may include poverty, heterosexism, violence, substance use/abuse, access to healthcare, educational disparities, environmental pollution, war and genocide, and/or the exploitation of labor.

SOC 154 Introduction to Women's Studies 3:3:0:0

Prerequisite(s): ENG 105

Corequisite(s): ENG 106

This interdisciplinary and multidisciplinary course is a preliminary exploration of the ever burgeoning literature of Women's Studies. It will expose students to recent discussions about the origins of present attitudes about women in Western society; critical analysis of the situation of women in patriarchal cultures; and efforts by women to achieve self-defined female identity. Drawing on materials from literature, history, religion, biology, psychology, feminist analysis, anthropology, and sociology, the course will investigate cultural beliefs about women's "nature" and role at different times and places; various attempts to explain the origins and persistence of female subordination; and women's efforts to define a new identity through political and creative activity.

SOC 155 Mass Culture 3:3:0:0

Prerequisite(s): LCCC Reading Placement Testing score of 94 or successful completion of RSS 100

Surveys popular culture in America as a mirror of American life. Popular music, sports, movies, radio, TV advertising, books, and the industries that support them will be surveyed and analyzed. Hero worship, romance and sex, and the dream of success are examined as major themes of American pop culture. The various relationships between pop culture and education, leisure, family relations, and the role of women and minorities are also examined.

SOC 250 Criminology 3:3:0:0

Prerequisite(s): SOC 150

Corequisite(s): ENG 105

This course offers students a sociological perspective on crime and criminal justice in American society. The class investigates differing definitions of the crime problem and explores how people learn about crime, what behaviors they fear, and why some but not all harmful acts are punished by the criminal justice system. Course materials examine connections between biological and social factors that affect violent and impulsive behavior and investigate how political and economic processes can concentrate those behaviors in certain communities. The class explores how the policies and practices of the criminal justice system respond to street crime and how those responses affect the lives of low-income and racially marginalized populations. The course evaluates the effectiveness of various criminal justice policies.

SOC 251 The Family 3:3:0:0

The social, historical, and economic forces affecting families in Western civilization are examined. Anthropological comparisons of the family in various cultures and biological challenges to the future of the family are investigated. The family as a changing institution is stressed with implications for individuals and society.

SOC 253 Diversity and Inequality 3:3:0:0

Prerequisite(s): SOC 150 or permission of instructor

This course examines the social systems of race/ethnicity, class, gender, and sexuality as they intersect in U.S. society. Students will develop a conceptual framework for understanding systems of power and oppression on both the micro level of lived experience and the macro level of social institutions. That theoretical framework will be used to analyze how systems of inequality were constructed historically and how they are perpetuated, resisted, and transformed in contemporary society.

SOC 258 Cultural Anthropology 3:3:0:0

Prerequisite(s): LCCC Reading Placement Testing score of 94 and LCCC English Placement Testing score of 57 or successful completion of RSS 100 and ENG 100

A survey of theories and methods of cultural anthropology, cultural evolution, cross-cultural variation, kinship relationships as well as political, religious, technological and economic organization will be studied. The emphasis will be on non-Western and nonindustrial societies.

**SOC 260 Independent Study–
Sociology** 1–3:1–3:0:0

Prerequisite(s): Introductory course in the subject area, minimum GPA of 3.0 in the course subject to be studied, and overall GPA of 3.0, or sufficient evidence of academic strength, and written permission of the instructor and academic dean to justify the independent study.

Reading, research, and/or experimentation on topic (not otherwise covered in college social sciences curriculum) selected in consultation with a faculty member. Special attention is to be given to the particular abilities and interest of students, with individual guidance for advanced studies. The student may choose: research on selected problems, supervised field studies, reading program, among other alternatives. The course may be a group of students as well as individual study. The course may be repeated for credit. The student is responsible to adhere to the college policies and procedures for independent study.

**SOC 283 Introduction to Social
Psychology** 3:3:0:0

Prerequisite(s): PSY 140; SOC 150

Offers a broad introduction to social psychology, the scientific study of human social influence and interaction. The various ways people think about, effect, and relate to one another will be a major emphasis. Topics within social cognition, social perception and social influence include social self-concept, social judgment, attitudes, persuasion, psychology explanations for social influence and interaction. Research methodologies commonly used in the discipline will be emphasized through empirical findings.

Spanish

SPN 105 Elementary Spanish I 3:3:0:0

The course will cover basic grammar, pronunciation, and vocabulary of the Spanish Language. Also includes the study of the Spanish-speaking cultures. Includes practice in listening, speaking, reading, and writing skills.

SPN 106 Elementary Spanish II 3:3:0:0

Prerequisite(s): SPN 105 or permission of instructor

The second semester of the first year of Spanish studies, the course is a continuation of the study of grammar and vocabulary of the Spanish language. Also includes the study of Spanish-speaking cultures. Emphasis on speaking, listening, reading, and writing skills will be the target.

**SPN 124 Spanish for Spanish
Speakers I** 3:3:0:0

Prerequisite(s): Intended for native Spanish-speakers or departmental approval

The course will expand the Spanish grammar and pronunciation for formal academic Spanish. The emphasis will be on speaking, reading, and writing skills in Spanish. The course is intended for native speakers or other students with Spanish-nativelike fluency requiring assessment of the essential language skills. The course will be taught in Spanish.

**SPN 125 Spanish for Spanish
Speakers II** 3:3:0:0

Prerequisite(s): SPN 124 or department approval

The course will continue with the expansion of grammatical problems in speaking, writing, and reading in Spanish. The course is intended for native speakers or other students with Spanish-nativelike fluency requiring assessment of essential language skills. The course will be taught in Spanish.

SPN 205 Intermediate Spanish I 3:3:0:0

Prerequisite(s): SPN 106 or two years of Spanish in high school or permission of instructor

The course is the first semester of the second year of two years of Spanish studies and, therefore, a continuation of study of grammar and vocabulary of the Spanish language. The course also includes the study of Spanish-speaking cultures and emphasis on speaking, listening, reading, and writing skills.

SPN 206 Intermediate Spanish II 3:3:0:0

Prerequisite(s): SPN 205 or three years of Spanish in high school or permission of instructor

The course is the second semester of the second year of two years of Spanish studies and therefore, a continuation of study of grammar and vocabulary of the Spanish language. The course also includes the study of Spanish-speaking cultures and emphasis on speaking, listening, reading, and writing skills.

**SPN 224 Advanced Spanish for
Spanish Speakers I** 3:3:0:0

Prerequisite(s): SPN 125 or departmental approval

The course is intended for native speakers of Spanish or other students with nativelike fluency who need improvement in advanced reading and writing and more academic speaking. The course will continue with the expansion of grammar and structure in both oral and written Spanish. The emphasis will be on written composition, grammar review, punctuation, spelling, reading, and discussing literature. This course will be taught in Spanish.

**SPN 225 Advanced Spanish for
Spanish Speakers II** 3:3:0:0

Prerequisite(s): SPN 224 or departmental approval

This course is a continuation of SPN 224. Students will continue expanding their knowledge and application of grammatical structures in speaking, writing, and reading. The course is intended for native speakers of Spanish or students with nativelike fluency (requires departmental approval). Students will also write reports, read and analyze longer literature selections, and do formal presentations. The course will be taught in Spanish.

Special Education

**SED 110 Accommodating Children With
Exceptionalities in
the Classroom** 3:3:0:0

Requirement: five hours of field experience and classroom observation

Introduces students to techniques in restructuring, adapting, and modifying educational environments to accommodate individual needs of children, including the physical, behavioral, academic, communication, and social environments.

SED 114 Special Education Field Experience I**1:1:2:0**

Initial special education field observation and teaching experiences in school classrooms that precede student teaching requires a minimum of 40 hours of observation and participation in four different special education settings: a full inclusion classroom, an autistic support classroom, a life skills classroom and a specialist classroom that has 504 or IEP students. Students gain a closer look at the special education system and the relationship of learning theory and effective teaching strategies. Documentation of the field experience will be the completed field experience portfolio.

SED 115 Foundations of Special Education**3:3:0:0**

Requirement: five hours of field experience and classroom observation

This course focuses on developing a knowledge base around current educational topics such as Inclusion, Response to Intervention (RtI), Positive Behavioral Intervention Supports (PBIS), school climate, and teamwork between paraprofessionals and professional staff. The student will examine the Council of Exceptional Children ethics and standards that are embraced by the field of special education and how this impacts the special education profession. The student will explore how belief systems can influence relationships with individuals with disabilities. In addition, the student will have opportunities to become aware of perspectives and attitudes toward individuals with disabilities and their family members. The course will explore how perceptions and attitudes can impact the relationships with diverse cultural, linguistic and ability diverse (CLAD) population.

SED 200 Instructional Strategies for Children With Exceptionalities**3:3:0:0**

Requirement: 10 hours of field experience and classroom observation

Introduces students to the process of developing, implementing, and monitoring individualized instructional strategies. Implementation of Individualized Education Programs (IEP) through goals and objectives is emphasized.

SED 205 Assistive Technology for Children With Exceptionalities**3:3:0:0**

Requirement: 10 hours of field experience and classroom observation

Emphasizes the role of assistive technology and universal design for learning as a related service in supporting children with exceptionalities in educational environments as a related service. Students identify national, state, and local resources and address legal requirements and funding issues. Students are given the opportunity for hands-on experiences with a wide array of technological devices.

SED 210 The Paraeducator Professional**3:3:0:0**

Requirement: five hours of field experience and classroom observation

Introduces students to the role and responsibilities of the paraeducator in relationship to the child, family, and educators. Addresses knowledge and skills for collaboration and positive communication with families, regular and special educators, and other professional staff within diverse learning environments. Legal, health and safety, school systems, confidentiality, and professional standards are among the topics addressed.

SED 220 Paraprofessional Practicum**6:1:18:0**

Prerequisite(s): EDU 101, 105, EDU 125, EDU 202; SED 114, 200, 205

The course is the culmination of the educational experience of the paraprofessional. This experience allows the student to spend 270 hours in a field placement in an actual classroom under the supervision of a professional certified teacher. The practicum student will be exposed to both inclusive and/or specialized settings to introduce the practicum student to the role and responsibilities of the paraprofessional in relationship to the student, family, and educators. The course supports the acquisition of knowledge and skills for collaboration and positive communication with students and other professionals within diverse learning environments.

Sport Management**SPM 101 Introduction to Sport Management****3:3:0:0**

Designed to acquaint students with career options in sport management. Various concepts in organizational modules dealing with programming, staffing, budgeting, recruiting, and public relations will be explored. This course requires outside-class participation in sport-related assignments.

SPM 102 Sport History and Philosophy**3:3:0:0**

An investigation into the evolution of sports, beginning with ancient man and progressing into the ancient Olympics up through modern day amateur and professional sports. By examining the progression of sport in our society and other cultures, we will endeavor to establish philosophical concepts related to contemporary sports.

SPM 103 Science and Wellness**3:3:0:0**

Investigates the effects of exercise on the human body. Different forms of exercise are studied, and their role in the wellness picture is established. Students will learn to evaluate various physical fitness components—such as cardio-respiratory fitness, muscular strength, endurance, flexibility—and determine body composition. Each student will be certified in CPR and first aid and be able to prescribe and implement an exercise program.

Student Development Services

SDS 102 Honors Scholars Experience 1:1:0:0

Designed to orient Honors Scholar students to LCCC and to the Honors Scholars Program. In addition to topics such as self-awareness, time management, student engagement, and diversity, special emphasis will be placed on prioritizing short-term and long-term goals, creating a two-year academic plan including transfer options, and developing an e-portfolio.

SDS 104 Major Decisions 1:1¼:0:0

This course is designed to help students improve decision making skills as well as to help them make a preliminary major and/or career choice based on information learned about themselves and the world of work. Students will learn about factors influencing their career choices, such as personal values, economic needs, transferability of skills, and the importance of life-long learning. Also, students will gain a deeper understanding of themselves through the use of several personality and career assessment tools.

SDS 105 Health Science Careers 1:1:0

This course introduces the student to career options in the health care industry. Emphasized are basic concepts related to any health science career, as well as the educational and credentialing requirements. Students will learn about factors influencing their career choices, such as personal values, economic needs, transferability of skills, and the importance of life-long learning. Also, students will gain a deeper understanding of themselves through the use of several personality and career assessment tools. Introduction to a career in health science will be obtained through information interviews, job shadowing, and research project. Transfer options will be explored through research, college visits, and transfer fairs. Class discussions and presentations will introduce the student to the concepts of critical thinking.

SDS 106 Liberal Arts First Year Seminar 1:1:0

This course will prepare Liberal Arts and General Studies majors for success at LCCC. In addition to topics shared among all FYE seminars, this seminar will emphasize developing an understanding of what it means to be an educated person, the value of a Liberal Arts education, and the essentiality of being an informed citizen in a democracy.

Veterinary Technician

VET 101 Veterinary Anatomy and Physiology 4:3:3:0

Prerequisite(s): Appropriate score on Biology Assessment or in BIO 105

An introduction to biochemistry, cell biology, and histology, followed by a survey of the structure and function of domestic animals using a systems approach. The physiology of domestic animals will be handled primarily in the lecture, while the anatomy will be discussed in the laboratory with cat dissection as the primary tool.

VET 110 Introduction to Veterinary Technology 3:3:0:0

Prerequisite(s): Admission into Vet Tech program

An introduction to the vocation of veterinary technology. Includes an orientation to professional organizations, practice of management skills, client relations, medical terminology, ethics, and legal and occupational issues. The role of the veterinary technician in veterinary medicine, research, industry, and private practice will be explored.

VET 115 Animal Management and Nutrition 2:2:0:0

Prerequisite(s): Admission into Vet Tech program

Familiarizes students with the basic principles of management of domestic species. Topics include animal husbandry, reproduction, restraint, behavior, breed identification, and principles of preventative medicine. Principles of nutrition and feeding will be taught. Animal management and feeding will be discussed in an economical context.

VET 120 Veterinary Parasitology 2:1:3:0

Prerequisite(s): Admission into Vet Tech program

Survey of clinically significant internal and external parasites of domestic animals. Parasites covered include mites, lice, ticks, fleas, flies, nematodes, cestodes, trematodes, and protozoans. Parasite life cycles, host infection, and pathology will be highlighted. Prevention and treatment of parasitic infections will be discussed. Diagnosis via sample collection, preparation, and microscopic evaluation will be taught during the lab section.

VET 125 Veterinary Clinical Laboratory Techniques 4:3:3:0

Prerequisite(s): Admission into Vet Tech program; CHE 106

Covers the laboratory evaluation of various diagnostic samples, including blood, urine, and cytologic specimens. Emphasis will be placed upon hematology, serum chemistry, serology, urine analysis, and cytology as applied to veterinary medicine. Laboratory work will focus upon lab technique and manual processing of samples. Lecture will focus upon the indication for and interpretation of clinical pathology indices associated with disease states and immunologic function.

VET 210 Large Animal Clinical Procedures 3:2:3:0

Prerequisite(s):

- admission into Vet Tech program;
- proof of vaccination: rabies and tetanus;
- proof of health insurance; and
- VET 101, 110, 115

Eight-week laboratory course conducted at the LCCC animal facility designed to provide students with hands-on experience in large animal clinical procedures. Procedures include restraint, physical examination, venipuncture, administration of medications via various routes, wound treatment, bandaging, sample collection, radiology, and general husbandry procedures. Species examined include cow, horse, sheep, and goat. Students must show proof of vaccination and health insurance. Attendance is mandatory.

VET 215 Animal Disease 3:3:0:0

Prerequisite(s): Admission into Vet Tech program; VET 101, 110, 125; ENG 105

Introduction to principles of disease in large and small animal species. Topics include clinical symptomology, diagnosis, therapy, epidemiology, and prevention of common diseases. Toxicology, zoonotic diseases, and medical emergencies will be covered. The course will be organized around body systems and associated pathologic conditions.

VET 218 Veterinary Pharmacology and Anesthesia 3:3:0:0

Prerequisite(s): Admission into Vet Tech program; CHE 106; VET 101, 110, 125

Explores the theory and application of pharmacology and anesthesiology. Pharmacologic principles include drug administration, distribution, excretion, and individual variability. Students learn about drug side-effects, dosing, and general pharmacologic calculations. The anesthesiology section addresses pre-anesthesia patient assessment, pre-anesthetic drugs, induction, maintenance, and post-operative patient monitoring. Students will work with various types of anesthetic equipment. Integrated into the course is a laboratory in which students will prepare anesthetic solutions, read prescriptions, and dispense medications. Students will also operate anesthesia machines, an EKG unit, and a pulse oximeter.

VET 220 Small Animal Clinical Procedures 4:3:4:0

Prerequisite(s):

- admission into Vet Tech program;
- proof of vaccination: rabies and tetanus;
- proof of health insurance;
- VET 101, 110, 125; and
- recommend VET 210

Laboratory course geared toward training students to perform a variety of clinically relevant diagnostic and therapeutic procedures with small animal species. Skills include restraint, physical examination procedures, venipuncture, administration of medications, sample collection, and general first aid. The focus of this course is to help students to develop technical skills in a veterinary setting. Course will be taught at the Vet Tech animal facility at LCCC. Students must provide proof of vaccination and health insurance. Attendance is mandatory.

VET 225 Veterinary Radiology and Surgical Nursing 4:3:4:0

Prerequisite(s):

- admission into Vet Tech program;
- proof of vaccination: rabies and tetanus;
- proof of health insurance; and
- VET 101, 110, 125, 218, 220

Overview of the basic principles of radiology. Topics include use and maintenance of radiographic/imaging equipment, restraint, and positioning of small animals and the development of diagnostic radiographs. Troubleshooting for poor quality films. Record keeping and safety issues. General principles of surgery will be introduced: aseptic technique, operating room protocol, and surgical assisting by the veterinary technician. Topics include surgical instrumentation, surgical preparations, surgical assisting and pre-, intra-, and post-operative nursing skills. Students will perform anesthesia on small animals and will perform prophylactic dentistry. Course will be taught at the Vet Tech animal facility at LCCC. Attendance is mandatory.

VET 228 Lab Animal Science and Exotics 4:3:3:0

Prerequisite(s):

- admission into Vet Tech program;
- proof of vaccination: rabies and tetanus;
- proof of health insurance; and
- VET 101, 115

Introduction to use and care of laboratory and research animals. Overview of laboratory animal biology, science, and management. Topics include anatomy and physiology, nutrition, breeding, husbandry, sanitation, behavior, handling, nursing, euthanasia, and necropsy. Animal welfare regulations and ethics issues will be discussed. Course is comprised of lecture and discussion. Laboratory sessions will provide hands-on experience with venipuncture, injections, gavage, and necropsy. Species covered include rats, mice, guinea pigs, and rabbits. Topics in exotic animal portion of course include restraint, examination, medicine and disease, and husbandry. Species of exotics will vary with availability. Course will be taught at the Vet Tech animal facility at LCCC. Students must provide proof of vaccination and health insurance. Attendance is mandatory.

VET 230 Veterinary Technician Externship 3:0:0:240

Prerequisite(s):

- successful completion of all Vet Tech courses with at least a "C";
- proof of vaccination: rabies and tetanus;
- proof of health insurance;
- transportation and housing is the responsibility of the student; and
- course offered in summer only

Twelve-week practicum conducted off campus at two designated community locations. A clinical experience, following satisfactory completion of all Vet Tech courses, aimed at providing students the opportunity to apply and refine the skills developed during the program. Competency will be assessed in the following categories: radiology, surgical preparation and assisting, anesthesia, dental prophylaxis, clinical laboratory procedures, general nursing skills, practice management, and client communication skills. Students must extern for a total of 240 hours during the summer. Students must provide proof of vaccination and health insurance. Students are responsible for transportation to their externship sites and housing arrangements (when applicable).

LCCC Profile



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History

Efforts of the local sponsor to establish a publicly supported community college in the Allentown area date to 1955 when studies were first conducted to determine whether or not the area could support such an institution. With the support of the Allentown Chamber of Commerce and several other groups, the Allentown public schools conducted a survey of high school seniors to determine the number of students who were interested in attending a community college.

The results were favorable and the Allentown Board of School Directors decided to develop full-time post-high school courses.

The Allentown Board of School Directors agreed to serve as an interim sponsor for the proposal to establish a community college, which was then submitted to the Lehigh County Board of School Directors in October 1964. Following a convention of school directors, the proposal to establish a community college was approved by the Board of School Directors. Several committees were formed to survey the interests of business, industry, students and other colleges in the area. These combined actions resulted in the writing of a formal application that was approved by official action of the Pennsylvania State Board of Education. A Board of Trustees was elected by the Lehigh County Board of School Directors, and Lehigh County Community College was officially established and empowered on March 31, 1966.

Sponsorship of the community college totals 13 school districts, including the nine Lehigh County school districts and four of the five Carbon County school districts.

For the first three semesters, September 1967 to February 1969, classes were held in the Old Lehigh County Court House and its Annex. Additional facilities were made available by the Allentown School District to meet laboratory needs. The move to the Schnecksville campus was completed for the spring 1969 semester. Classes and college offices were housed in the Administration Building.

The second building erected on the Schnecksville campus was the Science-Technology building in September 1971, which housed the college's daycare center, Stay 'N Play, which opened in August 1973. The building provides laboratories, classrooms, lounges and study areas. The gymnasium (Berrier Hall) and original library (Learning Resource Center) were completed for occupancy in September 1974.

To make its offerings accessible to as many citizens as possible, LCCC has established several off-campus sites. In August 1987, the college opened its Allentown city site in the Sovereign Building on Hamilton Mall. In 1992, LCCC's Carbon site was dedicated at Carbon County Vocational Technical School in Jim Thorpe. LCCC's Airport Site, at Lehigh Valley International Airport, was dedicated in 1993.

In January 1994, the college officially changed its name to Lehigh Carbon Community College—a gesture that reflects the college's service and responsiveness to its Carbon County constituents, as well as to those in Lehigh County. In 1996, the Carbon site was relocated to Nesquehoning.

The downtown Allentown site was relocated in January 1999 and, in November of that year, was rededicated as the Donley Center. The college extended its offerings even further, in Schuylkill County, by opening the Morgan Center in Tamaqua in August 2003.

The new Technology Center on the Schnecksville campus opened in conjunction with the start of the spring semester on January 19, 2004. The 50,000-square-foot building houses numerous classrooms and laboratories for the college's Technology, Computer Science, and Media programs.

As a result, the original Science-Technology building was renamed Science Hall in 2004.

On February 22, 2007, LCCC celebrated the grand opening of the Fowler Teacher Education Center in Science Hall and the relocation of the Stay 'N Play childcare, which was renamed Early Learning Center in 2008. In March 2008, the Rothrock Library opened in the former building of the Carbon-Lehigh Intermediate Unit No. 21, housing an Alumni Conference Center. Renamed in August 2008, the newly renovated Academic Resource Center (the original library building) housed a brand new cafeteria and bookstore.

In 2010, LCCC added a new Community Services Center, housing the Public Safety, Criminal Justice, CDL and the Center for Workforce and Community Education. Music and art rooms are also housed in the center as well as a full conference center facility. In November 2014, the building was renamed the Lisa Scheller-Wayne Woodman Community Services Center.

In Spring 2011, Berrier Hall was also renovated to house additional changing rooms, an all-new fitness center, the Student Government Association and athletic offices, the game room, a new dance studio and an auxiliary gym. The realignment of Orchard Road behind Berrier Hall diverted vehicular traffic away from pedestrians walking to and from the gymnasium and the library, as well as for the Athletic Fields (soccer, baseball and softball), a project that was completed in 2013 for use in Spring 2014.

In January 2014, LCCC's Carbon County site relocated to the west wing of Jim Thorpe Area High School in time for the Spring 2014 semester.

In addition, by growing its online program, LCCC continues its efforts to meet students wherever they are—in homes, offices, or wherever a personal computer can be accessed.

In July 2014, the college welcomed its first female president when the Board of Trustees named Dr. Ann D. Bieber as president. Bieber has been with the college since 1981.

The college celebrated its 50th anniversary in 2016 with a series of events and celebrations.

Lehigh Carbon Community College is governed by a Board of Trustees composed of representatives from each of the college's 13 sponsoring school districts and two at-large representatives. The trustees work with the administration to ensure that the mission of the college is effectively translated into working policies to best serve the needs of the college's constituents.

2018-2019 Board of Trustees

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