



Cuyahoga Community College

Catalog

2014-2015

www.tri-c.edu/catalog

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Where futures beginSM

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Board of Trustees

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Mission

To provide high quality, accessible and affordable educational opportunities and services – including university transfer, technical and lifelong learning programs – that promote individual development and improve the overall quality of life in a multicultural community.

Vision

Cuyahoga Community College will be recognized as an exemplary teaching and learning community that fosters service and student success. The College will be a valued resource and leader in academic quality, cultural enrichment, and economic development characterized by continuous improvement, innovation, and community responsiveness.

Values

To successfully fulfill the mission and vision, Cuyahoga Community College is consciously committed to diversity, integrity, academic excellence, and achievement of individual and institutional goals. We are dedicated to building trust, respect, and confidence among our colleagues, students, and the community.

Cuyahoga Community College is accredited by
The Higher Learning Commission of the North Central Association
of Colleges and Schools

30 N. LaSalle Street
Suite 2400
Chicago, IL 60602-2504
800-621-7440



A Message from the President

Welcome to Cuyahoga Community College. Tri-C is an innovative and inclusive learning community, dedicated to your success and completion. We are delighted that you have selected our College as the place to continue your education and career development. Our faculty, staff and administrators are proud to offer many options to assist you in reaching your educational goals.

A Tri-C education is both powerful and valuable. Offering more than 1,000 courses and 140 degree and certificate programs (and counting), our College is preparing students to thrive in the new global economy. We offer programs in most career fields, including health care, green technology, culinary arts, engineering, bioscience, business, public service, liberal arts, transportation, music, manufacturing and media production—to name just a few of the possibilities. Upon completion of your degree, transfer and dual-enrollment agreements offer seamless transition to many universities.

As we continue to innovate, we are working to meet you where you are. The College is the leading provider of online opportunities in the state. You will appreciate the flexibility, choice and convenience of courses that accommodate your life. Select from offerings online, in the classroom or a combination of both. More than 130 courses are offered in locations throughout the community, close to home or work, with day, evening and weekend options.

Our four attractive campuses offer outstanding amenities, including wireless Internet, wellness facilities, libraries and study areas. Services such as academic advising, online or e-advising, tutoring, career counseling and mentoring services are available to help you plan your academic journey and succeed in achieving your goals. Our vibrant student life invites you to get involved in student government, collegiate athletics, volunteer activities and a wide array of clubs and organizations.

This is not, after all, just our College. It is yours. We invite you to take full advantage of the many opportunities to make it your own and aid in your success. As you move forward on your journey, I trust you will find that “Tri-C is where futures begin.”

Sincerely,

A handwritten signature in blue ink that reads "Alex Johnson".

Alex Johnson
President

Important Phone Numbers

**Main Number 216-987-6000
(toll free 800-954-8742)**

All Tri-C telephone numbers are in the 216 area code.

	Eastern Campus	Metropolitan Campus	Western Campus	Westshore Campus
Adjunct Services	216-987-2226	216-987-4225	216-987-5227	216-987-3941
Assessment	216-987-2256	216-987-4311	216-987-5256	216-987-3888
Bookstore	216-987-2070	216-987-4550	216-987-5550	216-987-3908
Campus Police and Security	216-987-4325	216-987-4325	216-987-4325	216-987-3988
Career Center	216-987-2567	216-987-4913	216-987-5575	216-987-5889
College Information & Enrollment Support Center	216-987-6000	216-987-6000	216-987-6000	216-987-6000
Counseling	216-987-6000	216-987-6000	216-987-6000	216-987-6000
Enrollment Center	216-987-6000	216-987-6000	216-987-6000	216-987-6000
Library	216-987-2085	216-987-4292	216-987-5410	216-987-3888
My Tri-C Card Office	216-987-6000	216-987-6000	216-987-6000	216-987-6000
Program 60	216-987-6000	216-987-6000	216-987-6000	216-987-6000
Student Financial Aid & Scholarships	216-987-6000	216-987-6000	216-987-6000	216-987-6000
Student Life Activities	216-987-2045	216-987-4610	216-987-5428	216-987-5926
TDD for Hearing Impaired	216-987-2230	216-987-4048	216-987-5117	216-987-5117
Tutoring	216-987-2256	216-987-4319	216-987-5256	216-987-3888
Veteran Affairs	216-987-2015	216-987-4164	216-987-5203	216-987-5884
Workforce and Economic Development Division	216-987-3075	Registration	216-987-3075	General Information
Corporate College® East	216-987-3075	Registration	216-987-2800	General Information
Corporate College® West	216-987-3075	Registration	216-987-2800	General Information

2014-2015 Academic Calendar

FALL SEMESTER 2014	SPRING SEMESTER 2015	SUMMER SESSION 2015
FULL TERM 16-Week August 25, 2014-December 14, 2014	FULL TERM 16-Week January 12, 2015-May 10, 2015	FULL TERM 10-Week May 26, 2015-August 2, 2015
SESSION A 8-Week August 25 - October 19	SESSION A 8-Week January 12 - March 8	SESSION J 5-Week May 26 - June 28
SESSION B 8-Week October 20 - December 14	SESSION B 8-Week March 16 - May 10	SESSION K 5-Week June 29 - August 2
SESSION O 14-Week September 8 - December 14	SESSION O 14-Week January 26 - May 10	SESSION L 8-Week June 8 - August 2

FALL SEMESTER 2014

Date	Day	Calendar Description
April 7-April 13	<i>Monday-Sunday</i>	Priority Registration
April 14 - August 24	<i>Monday-Sunday</i>	Registration for Fall Semester 2014
August 25	<i>Monday</i>	Fall Semester (16-Week) and Session A (8-Week) Begin
September 1	<i>Monday</i>	Labor Day - College Closed - No Classes Scheduled
September 8	<i>Monday</i>	Session O Begins
September 22	<i>Monday</i>	Make up work to resolve 'Incomplete' grades due to faculty
October 1	<i>Wednesday</i>	Incomplete grades for 2014 Spring and Summer Semesters rolled to 'F' grades
October 19	<i>Sunday</i>	Session A Ends
October 20	<i>Monday</i>	Session A Final Grades Due
October 20	<i>Monday</i>	Session B Begins
November 7	<i>Friday</i>	Last Day to Withdraw from Full Term (16 Week) Course with a 'W' Grade***
November 11	<i>Tuesday</i>	Veterans' Day - College Closed - No Classes Scheduled
November 27-November 30	<i>Thursday-Sunday</i>	Thanksgiving Recess - College Closed - No Classes Scheduled
December 17	<i>Wednesday</i>	Fall 2014 Commencement (Date Tentative)
December 8-14	<i>Monday-Sunday</i>	Final Exam Week - Full Term
December 14	<i>Sunday</i>	Fall Semester Full Term, Session B and Session O End
December 16	<i>Tuesday</i>	Final Grades Due - Full Term, Session B and Session O
Dec 24, 2014 - Jan 1, 2015	<i>Wednesday-Thursday</i>	Winter Break - College Closed - No Classes Scheduled

SPRING SEMESTER 2015

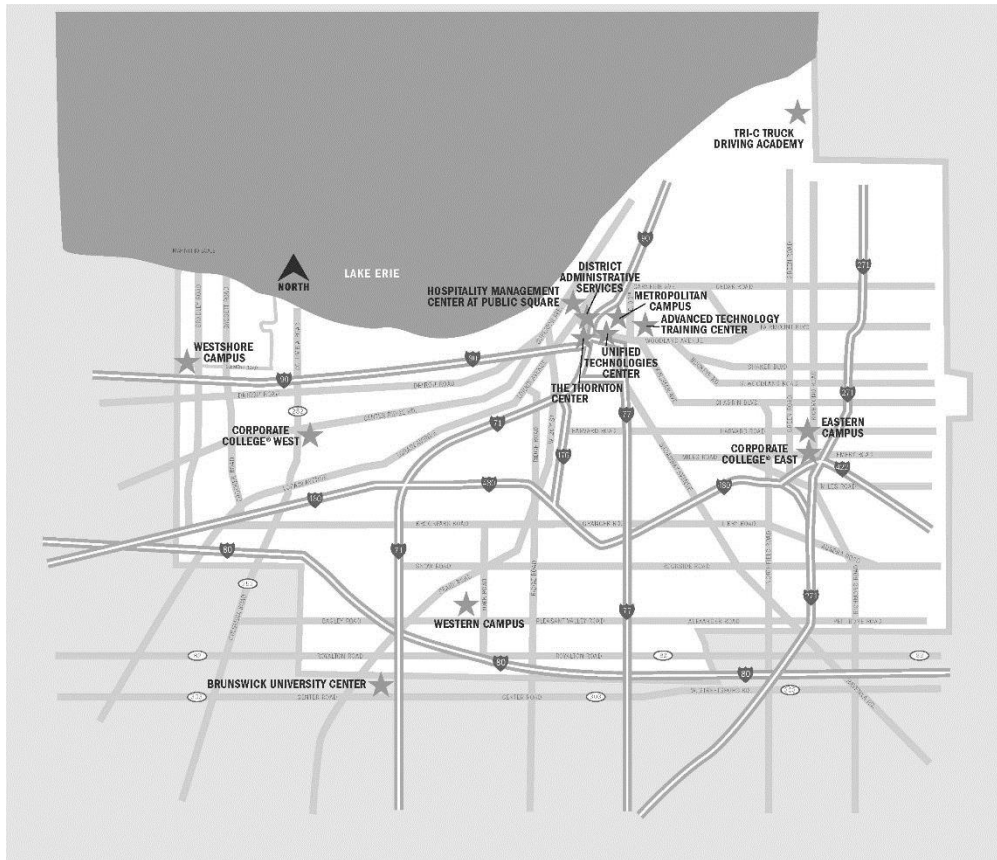
October 6-October 12	<i>Monday-Friday</i>	Priority Registration
October 13-January 11	<i>Saturday-Sunday</i>	Registration for Spring Semester 2015
January 12	<i>Monday</i>	Spring Semester Full Term and Session A Begin
January 19	<i>Monday</i>	Martin Luther King Jr. Day - College Closed - No Classes Scheduled
January 26	<i>Monday</i>	Session O Begins
February 11	<i>Tuesday</i>	Make up work to resolve 'Incomplete' grades due to faculty
February 18	<i>Wednesday</i>	Incomplete grades for Fall 2014 Semester rolled to 'F' grades
March 8	<i>Sunday</i>	Session A Ends
March 9-15	<i>Monday-Sunday</i>	Spring Break - No Classes Scheduled
March 16	<i>Monday</i>	Session A Final Grades Due
March 16	<i>Monday</i>	Session B Begins
April 3	<i>Friday</i>	Deadline to Petition for Graduation for Spring and Summer 2015
April 15	<i>Wednesday</i>	Last Day to Withdraw from Full Term (16 Week) Course with a 'W' Grade***
May 4-10	<i>Monday-Sunday</i>	Final Exam Week - Full Term
May 10	<i>Sunday</i>	Spring Semester Full Term, Session B and Session O End
May 12	<i>Tuesday</i>	Final Grades Due - Full Term, Session B and Session O
May 21	<i>Thursday</i>	Spring and Summer 2015 Commencement

SUMMER SESSION 2015

March 9 - May 25	<i>Monday-Monday</i>	Registration for Summer Session 2015
May 25	<i>Monday</i>	Memorial Day - College Closed
May 26	<i>Tuesday</i>	Summer Session Full Term and Session J Begin
June 8	<i>Monday</i>	Session L Begins
June 28	<i>Sunday</i>	Session J Ends
June 29	<i>Monday</i>	Session J Grades Due
June 29	<i>Monday</i>	Session K Begins
July 3	<i>Friday</i>	Independence Day Observation - College Closed - No Classes Scheduled
July 16	<i>Thursday</i>	Last Day to Withdraw from Full Term (10 Week) Course with a 'W' Grade ***
August 2	<i>Sunday</i>	Summer Session Full Term, Session K and Session L End
August 4	<i>Tuesday</i>	Final Grades Due - Full Term, Session K and Session L

*** Complete list of Academic Progress Reporting dates and Withdrawal dates are available on the Academic Calendar located at: www.tri-c.edu/acadcalendar/Pages/default.aspx.

Dates above are subject to change.



Eastern Campus
4250 Richmond Road
Highland Hills, OH 44122
216-987-6000

Metropolitan Campus
2900 Community College Avenue
Cleveland, OH 44115
216-987-6000

Western Campus
11000 Pleasant Valley Road
Parma, OH 44130
216-987-6000

Westshore Campus
31001 Clemens Road
Westlake, OH 44145
216-987-6000

**Advanced Technology
Training Center**
3409 Woodland Avenue
Cleveland, OH 44115
216-987-0148

Brunswick University Center
3637 Center Road
Brunswick, OH 44212
866-933-5182

Corporate College[®] East
4400 Richmond Road
Warrensville Heights, OH 44128
216-987-2800

Corporate College[®] West
25425 Center Ridge Road
Westlake, OH 44145
216-987-6000

Hospitality Management Center
At Public Square, Cleveland
180 Euclid Avenue
Cleveland, OH 44113
866-933-5181

Unified Technologies Center
2415 Woodland Avenue
Cleveland, OH 44115
216-987-3075

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Cuyahoga Community College

Education at Cuyahoga Community College (Tri-C®) is a life-changing experience. More than 900,000 present and former students have been touched by the Tri-C experience. Tri-C has enriched the lives and helped build solid futures for all who have attended, from the hopeful students who stood in line at the Brownell School building in 1963 to register for Tri-C's first classes to today's students who register through the Internet. The far-reaching effects of education at Tri-C have touched not only the individual students but their families, as well as the entire community.

The faculty, staff and administration at Tri-C are dedicated to providing innovative and flexible services to students and the broader community as a whole. This commitment is expressed by developing a curriculum and delivering an academic experience that will produce students who are competitive within the job market, well-educated and informed. Whether these students are on the threshold of an exciting career, returning for new skills training or simply taking courses in a field of interest, the academic experience at Tri-C meets their specialized needs.

College Climate and Commitment to Diversity and Affirmative Action

The College embraces human diversity and is committed to affirmative action and equal opportunity. The College is committed to eliminating discrimination and harassment in the workplace and academic environment. These commitments are moral imperatives consistent with an intellectual community that celebrates individual differences, diversity and meaningful individual freedom to pursue professional and educational goals. Any employee, student or other person who wishes to report discrimination or harassment should contact the College's Office of Diversity & Inclusion at: Cuyahoga Community College, 2500 East 22nd Street, Cleveland, OH 44115, 216-987-0204. In addition, the College's Title IX (related to sex discrimination) and Section 504 and Title II of the Americans with Disabilities Act (related to disability discrimination) Coordinator is the Director of Diversity & Inclusion. The Coordinator can be reached at the above address and telephone number.

History of Cuyahoga Community College, the Campuses and Corporate College®

On September 23, 1963, the largest first day enrollment for a community college in the nation's history took place at Tri-C's first home, the 19th century Brownell School building in downtown Cleveland, which was leased from

the Cleveland Board of Education. The initial enrollment was just over 3,000 students. Today, Tri-C serves more than 52,000 credit and non-credit students each year. Now one of the largest colleges in Ohio and the largest in Greater Cleveland, Tri-C has expanded to four modern campuses in downtown Cleveland, Parma, Highland Hills and Westlake, as well as two Corporate College® sites in Westlake and Warrensville Heights. Other facilities include the District Administrative Services in Cleveland and the Unified Technologies Center (UTC) adjacent to the Metropolitan Campus. Tri-C opened its beautiful and spacious 50,000-square-foot Advanced Technology Training Center (ATTC) in October 2012. The ATTC features high-bay labs, multipurpose training areas and an energy-efficient environment for learning and offers the latest state-of-the-art technology and curriculum. The ATTC provides students with education, hands-on training and employment preparation skills for well-paying jobs and provides employers with a constant feeder system of job-ready candidates for the in-demand high-tech industry.

Eastern Campus

Founded in 1971, the Eastern Campus in Highland Hills has grown to encompass four buildings. In addition to state-of-the-art classrooms and laboratories, the campus celebrates a newly opened Natatorium and Fitness Center which features a six-lane swimming pool, diving area, vortex pool, and premier fitness center and weight room. The new space also provides learning spaces for students enrolled in the Tri-C Sport and Exercise Studies program and other physical education classes. Students, faculty, and community members can also make use of this pool and fitness center, as well as the full-service library, 600-seat performing arts center, art gallery, massage therapy clinic, music studios, cafeteria, employment and career services center. The Eastern Campus is located in the growing I-271 and I-480 corridor. Regional Transit Authority (RTA) buses also provide public transportation services.

The heart of the Hospitality Program is the Hospitality Management Center located across from Public Square in downtown Cleveland. This location, which is supported by faculty from the Metropolitan Campus, is in the center of the "culinary and hotel district", within walking distance of nationally recognized chef-run restaurants and expanding lodging and entertainment businesses.

Metropolitan Campus

The Metropolitan Campus which opened in 1969, is Tri-C's first campus. Located near downtown Cleveland in the Campus District, the Campus is easily accessible from Interstates 71, 77 and 90. Classes are offered during the day, evenings, on weekends and through distance learning/e-learning.

The Metropolitan Campus houses outstanding science, engineering and health careers laboratories. Students learn first-hand in laboratories similar to those in the work environment. Laboratories exist for nursing, information technology, manufacturing and the recording arts industry. Additionally, the Campus opened the Transfer Connection Center in 2013 to help students navigate the process from degree completion at Tri-C to a successful transfer to a four-year college or university.

The Tommy LiPuma Center for Creative Arts presents the best in local, regional and international artists in the areas of music, dance, theater and performance art. Students mix music, record and stage musicians as part of the Recording Arts and Technology Program. The Visual Communication and Design Program offers students degrees and certificates in graphic design, illustration, web and interactive media, photography, digital video and digital filmmaking, 3D Design and 3D Animation.

Students with an interest in Engineering Technology can choose from nine degree programs in the industry that are nationally recognized by the American Society of Engineering Education and the Accreditation Board for Engineering and Technology.

A state-of-the-art center for Nursing provides hands-on learning. Students learn with the use of a Human Patient Simulator, a computer-driven mannequin, which mirrors the physical characteristics of a human and allows students to respond to critical care issues. A simulated hospital care unit with 22 beds allows students to study and test simulated patients.

Allied health laboratories also exist on the Campus for many other careers in the health care field including dental hygiene, health information management, surgical technician, emergency medical technician and occupational and physical therapy. The Dental Hygiene Clinic also provides low cost preventive dental care to community residents.

The Metropolitan Campus also features a commercial kitchen and full service restaurant for students in the Hospitality Management Program. The student operated restaurant serves breakfast and lunch during portions of the school year.

Western Campus

The Western Campus in Parma, Ohio, has served Cleveland's southwest suburbs since 1966, operating in the former Crile Veterans Hospital.

The facilities were replaced in 1975 with a six-building interconnected campus. The sprawling, tree-lined picturesque campus offers more than 1,000 day, evening and weekend classes for associate degree programs. Students benefit from industry-standard laboratories and spacious learning environments, such as the Health

Careers and Sciences Building, Advanced Automotive Technology Center and the Visual Communications Center of Excellence. A new Public Safety Training Center of Excellence will be completed in Fall 2014. The only one in Northeast Ohio, the Public Safety Training Center will offer the latest, specialized training for EMTs, firefighters and police officers.

The Western Campus provides a full array of student services in the centralized Galleria. These services include the Enrollment Center, Admissions Office, Career Services, Barnes & Noble bookstore, a library, computer labs, a cafeteria and a coffee shop. Students and residents also have access to numerous science, health career and technology labs, a 466-seat theater, an indoor pool, gymnasium, fitness center, outdoor track and athletic fields for soccer, softball and baseball. Senior residents can take free non-credit courses through the Encore Program, and summer camps provide affordable, fun educational experiences for grade-school children and teens.

The 220-acre Western Campus at 11000 Pleasant Valley Road is accessible from Interstates 71, 77 and 480. Regional Transit Authority (RTA) buses provide public transportation services to the campus.

An extension of the Western Campus, Brunswick University Center (BUC) was built in 2011 in Brunswick, Ohio. Serving Medina County, BUC offers associate degree programs, as well as bachelor's degree and master's degree programs in criminal justice, business administration, accounting, forensic accounting and management leadership through its partnerships with Tiffin University and Franklin University.

Brunswick University Center at 3605 Center Road (Route 303) is easily accessible from Interstate 71. It is located next to Brunswick High School. The Brunswick Transit Authority provides public transportation to the center.

Westshore Campus

The Westshore Campus is committed to meeting the educational needs of the residents of Cleveland's Westshore communities. With its opening in 2011 and the existing Corporate College® West facility, Westshore provides opportunities for students to complete associate degrees for transfer to a four-year institution or for certificates/degrees leading to entry into the workforce in a variety of health careers areas and in business.

The Westshore Campus is a transfer focused campus with an emphasis on Science, Technology, Engineering, Mathematics and Medical (STEMM) programs and degrees. Liberal arts, business, IT, pre-engineering, medical assisting, emergency medical technology, English as a Second Language, and many more programs are offered at Westshore. The Campus offers a full array of student services including a one-stop Enrollment Center, Technology Learning Center, library, five science

General Information

labs and four health career labs, including a human patient simulator lab.

The Westshore Campus and Corporate College West site are easily accessible from Interstates 90 and 480 and are located approximately 5 miles from each other in the city of Westlake.

Community & Continuing Education

Tri-C offers a wide range of Community and Continuing Education programs and courses spanning a broad base of career development, personal enrichment, and continuing education topics for all ages. We seek to promote individual development and improve the overall quality of life through multicultural lifelong learning courses.

Audiences we serve:

Youth: Young people can experience college life with our varied line up of courses and summer camps. These opportunities provide a fun and challenging learning environment for young students that complement their current studies and enable them to easily move into adulthood.

Professionals: Certified and licensed individuals will find our selection of personal career development classes and continuing education courses appealing as they help to assist individuals in maintaining their certifications or licenses with convenient and economical classes taught by professionals in the field.

Personal Enrichment: Tri-C encourages community members of all ages to participate in both events and courses that enhance the quality of life while building skill with hands-on and informative classes. These classes and events seek to show the ease of acquiring a new skill in a casual and fun environment.

Topic Areas: Taking a cue from the community we serve, our lineup of courses is continually updated based on the suggestions of residential and business community members.

Continuing Education: We offer a broad range of topics approved for professionals in need of continuing education for many occupations and professions.

All classes and courses offer valuable information to learners of all ages looking to enhance their current skills or quality of life.

Workforce and Economic Development Division

The Workforce and Economic Development Division (WEDD) at Tri-C® partners with business and industry, government organizations and the community to provide: non-credit and credit fast track training for both individuals and businesses; employee and leadership

development solutions for professionals and managers; and continuing education and community programs.

Workforce Solutions

Job Link Services

The Job Link Services (JLS) Department assists with recruiting and assessing qualified candidates to support workforce training programs. JLS offers employability training which includes: soft skills/life skills, work ethic, communications and teambuilding. In addition, job readiness skills such as resume preparation, interviewing techniques, employer networking, online job search and placement assistance and retention services are also offered to all students participating in workforce training grant-funded and other fast-track training programs. For information, call (216) 987-4391.

Public Safety Institute

The Public Safety Institute has provided over three decades of professional training to law enforcement and fire students as well as public safety professionals. The academies provide state-certified training for police officers, fire fighters, security officers, corrections officers and bailiff personnel, as well as advanced training in law enforcement and fire. Hands-on training is given by experienced instructors, where students learn the skills and teamwork necessary to be prepared when called upon for duty.

The Law Enforcement Academies are certified through the Ohio Peace Officer Training Commission (OPOTC). The academy offices and training facilities are located in the Unified Technologies Center at the Metropolitan Campus in Downtown Cleveland. Tri-C offers four basic OPOTC certified academies: Peace Officer Basic Training, Private Security Training, Bailiff and Corrections. The advance training programs of the Public Safety Institute offers the opportunity for police, security and law enforcement professionals to enhance their skills and enable them to deal with the ever-changing needs of society.

The Fire Training Academy facilities are located at the Western Campus in Parma. The Academy is chartered by the State of Ohio, Department of Public Safety, and Division of Emergency Medical Services in Columbus. The Fire Training Academy was established by a partnership with the Northeastern Ohio Fire Chiefs' Association and Tri-C. There are over 300 fire departments in a seven county region that rely on Tri-C's Fire Training Academy to meet their training needs.

The Fire Training Academy provides academic and practical skills training for Level I & II firefighters. We provide four day academies and two evening academies each year. Annually, approximately 200 students graduate from the Academy. This training provides the skills necessary for an entry-level firefighter position. Training includes topics related to the established requirements of the Ohio Revised Code for Career Fire

Fighters and the training and educational requirements identified in NFPA 1001.

Manufacturing, Engineering and Bioscience

The Advanced Manufacturing, Engineering and Bioscience Division provides students and industry with affordable, high-quality training leading to portable skill credentials. The division offers credit, non-credit, certificate and customized programs in manufacturing foundation skills, manufacturing technologies, applied industrial maintenance, medical device manufacturing, pharmaceutical drug manufacturing, engineering skills development, pre-apprenticeship and apprenticeship training.

At the downtown Unified Technology Center facility, the shop floor spans more than 12,000 square feet of completely renovated space that supports the latest equipment which regional manufacturers either currently use or will use in the future. It is the largest industrial maintenance training center in Northeast Ohio and through the Bioscience Workforce Training and Assessment Center, the only location offering job skills training in this emerging technology.

Programs include: Precision Machining, CNC Machining, Industrial/Equipment Maintenance, Tool and Die Apprentice, Industrial Welding, Blueprint Reading, Shop Math, Computer-Aided Design (CAD), Quality Control, Electronics Assembly, Mechatronics, and Wind Turbine Technician. In addition to the standard programs, customized job skill training is available.

Through consultation with an Industry Advisory Board, the standard and customized training programs provide participants with marketable skills that are “filling the talent pipeline” for Northeast Ohio manufacturers.

Regional Transportation Institute

The Regional Transportation Institute provides high-quality workforce training in Transportation, Logistics and Distribution (TLD) job functions. The training is targeted toward entry level through first line supervision personnel and provides certificates in TLD concentrations that demonstrate comprehension of applicable terminology, an ability to execute operational activities and the role and impact of their job function on the supply chain.

Located in the Heritage Business Park in Euclid, Ohio, the Regional Transportation Institute operates in an industrial environment utilizing industry standard equipment and supply chain management tools to simulate actual working environments.

Using active industry professionals to provide instruction, training is delivered through contract training, seminars and certificate programs. Current training programs include: Class A and B CDL, Forklift Operation, Hazardous Material/Dangerous Goods

Certification and Fundamentals of Warehouse and Distribution.

Center for Health Industry Solutions

The Center for Health Industry Solutions provides training tailored to meet the needs of the health care industry and its current and future employees. The Center focuses on critical health care employment shortages and provides a wide selection of courses that include training to assist in entering the health care field, continuing education and professional certification programs.

The Center works closely with representatives of the health care industry to develop accelerated training and education programs that respond quickly to critical workforce needs. All training is delivered at Tri-C sites, and scheduled for the convenience of students during the day, evenings, or on weekends.

Programs exist for those interested in entry-level positions, as well as for seeking career changes. There are also programs for professionals to keep up with change in their respective health care fields.

Entry-level Career Programs/Certifications:

- **State Tested Nurse Assistant (STNA)**
STNAs work in a variety of health care settings to improve their patient’s well-being by assisting them with personal care and monitoring progress with their recovery goals.
- **Dental Assistant Radiography Initial Training**
This course meets the Ohio State Dental Board training requirements for those seeking to become a certified dental radiographer.
- **Health Care Navigator**
This program prepares students for work as an inpatient or outpatient navigator. Navigators assist patients with obtaining and accessing healthcare.
- **Home Health Aide**
The Home Health Aide course is designed to prepare the nurse assistant for employment to provide home health care. STNA training experience is required.
- **Patient Access Specialist**
The Patient Access Specialist program is designed to prepare students for the many opportunities available in the Patient Access department in a hospital setting. These may include admitting and registering, financial counseling or providing customer service to patients.
- **Professional Coding Program**
The Professional Coding program utilizes the Professional Medical Coding Curriculum designed by the American Academy of Professional Coders to prepare students for the Certified Professional Coder exam.

The Center works with health care organizations to develop customized training programs that can be presented at their sites. Our programs keep up with the rapid changes in health care, and our expert instructors

General Information

focus training on the key areas students need to succeed on the job. Whether you are a health care professional looking for career advancement, or a displaced worker looking to get into the health care field, the Center has high quality programs to meet your needs.

Information Technology Training

The Information Technology Training department provides industry-certified training tailored to meet the information technology needs in Northeast Ohio. With courses available both online and flexibly scheduled, IT Training provides continuing education and professional certification programs for working professionals.

Corporate College®

About Us

Founded in 2003, Corporate College offers Northeast Ohio businesses and individuals professional training and development, along with state-of-the-art meeting and conference space. Corporate College delivers training and development solutions for organizations and individuals. We have internal organizational development and content experts, along with a professional external talent bench that includes the best and brightest minds in Northeast Ohio. As a division of Cuyahoga Community College, we provide access to an extensive network of faculty and programs to ensure we deliver the right solutions for your unique business needs. Corporate College has locations in Warrensville Heights and Westlake.

Mission Statement

Our mission is to provide high-quality training and consulting expertise that drives business growth for organizations and professionals.

Customized Training

Corporate College understands your unique organizational challenges and provides customized solutions that meet your strategic business goals. These customized solutions help organizations become more efficient, grow employee skills and retain top talent. We strive to improve individual, team and organizational performance. Programs are delivered exclusively to groups at your company facility or at our Corporate College locations.

Professional Development

Corporate College provides training and development for professionals. We understand that in order to succeed and remain competitive in today's dynamic business environment, employees must continue to grow and learn. Our talented team brings a wealth of experience that will help take your skills to the next level.

Training Topics

- Business Operations
- Customer Service and Sales
- Health IT/Informatics

- Information Technology
- Leadership
- Lean and Lean Six Sigma
- Project Management
- Quality and Compliance

Conference Center and Hospitality Services

With Corporate College as your partner, planning that special event is easy. Our experienced team of event planners will focus on your event details so you can stay focused on your business agenda. Your Corporate College event planner will coordinate with our energetic and professional staff to ensure your meeting is a success. In addition to event planners, our team includes: concierge staff, an audio-visual technician, technology support staff and world-class catering.

Accreditation and Institutional Memberships

Tri-C holds institutional memberships in numerous national, educational, professional, and accrediting organizations, as well as local area chambers of commerce. Tri-C is accredited by The Higher Learning Commission, a commission of the North Central Association of Colleges and Schools. In addition, a number of Tri-C's career programs are approved or accredited by appropriate specialized associations or agencies.

Some of these memberships are:

- Accrediting Commission for Education in Nursing, Inc. (ACEN)
- Accreditation Review Committee on Education-Physician Assistant
- Achieving the Dream
- American Association for Paralegal Education (AAFPE)
- American Association for Women in Community Colleges (AAWCC)
- American Association of Collegiate Registrars and Admissions Officers (AACRAO)
- American Association for Paralegal Education (AAFPE)
- American Association of Community Colleges (AACCC)
- American Association of University Women (AAUW)
- American Bar Association
- Accreditation Board for Engineering and Technology (ABET)
- American Council on Education (ACE)
- American Culinary Federation
- American Dietetic Association
- American Dental Educators Association
- American Health Information Management Association (AHIMA)
- American Occupational Therapy Association (AOTA)
- American Society of Health-System Pharmacists (ASHSP)
- American Student Association of Community Colleges (ASACC)
- American Society of Mechanical Engineers

American Technical Education Assistance (ATEA)
 Association of Community College Trustees (ACCT)
 Association of Governing Boards of Universities & Colleges (AGB)
 Association of Performing Arts Presenters (APAP)
 Association of Physical Plant Administrators (APPA)
 Association of Veterinary Technician Educators (AVTE)
 College Entrance Examination Board
 Commission on Accreditation for Respiratory Care
 Committee on Accreditation for Education in Neurodiagnostic Technology
 Commission of Accreditation of Allied Health Education Programs (CAAHEP)
 Community College Humanities Association
 Community Colleges for International Development (CCID)
 Council for Adult and Experiential Learning (CAEL)
 Council for Advancement & Support of Education (CASE)
 Council for Higher Education Accreditation (CHEA)
 Council for Opportunity in Education (COE)
 Council of North Central Two-Year Colleges (CNCTYC)
 Employer Resource Council (ERC)
 50 Club of Cleveland, The
 Fund for Our Economic Future (Cleveland Foundation)
 Government Finance Officers Association
 Greater Cleveland Partnership, The
 Higher Learning Commission, The
 Joint Review Committee on Education in Radiologic Technology (JRCERT)
 Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDMS)
 Joint Review Committee on Education Programs for EMT-Paramedics
 League for Innovation in the Community College
 Midwest Institute for International/Intercultural Education (MIIE)
 National Alliance of Community and Technical Colleges
 National Alliance of Concurrent Enrollment Partnership
 National Association for Community College Entrepreneurship, Inc.
 National Association for Developmental Education (NADE)
 National Association for the Education of Young Children (NAEYC)
 National Association of College & University Business Officers (NACUBO)
 National Association of Community College Teacher Education Program (NACCTEP)
 National Collegiate Honors Council
 National Council on Black American Affairs
 National Guild of Community Schools of the Arts
 National Junior College Athletic Association (NJCAA)
 National Network of Health Careers
 National Verbatim Reporters Association (NVRA)
 Northeast Ohio Council on Higher Education (NOCHE)
 Ohio Association of Community Colleges (OACC)
 Ohio Campus Compact (OCC)

Ohio College Testing Association
 Ohio Community College Athletic Conference (OCCAC)
 Ohio Fuel Cell Coalition
 Physician Assistant Education Association (PAEA)
 President's Round Table
 RC-2020
 Second Nature, Inc.
 Western Interstate Commission for Higher Education

Northeast Ohio Commission on Higher Education

Tri-C® is a member of the Northeast Ohio Commission on Higher Education (NOCHE). This is an organization of 14 Northeast Ohio colleges and universities that represents a partnership among these institutions of higher education and the business and industrial community.

Established in 1951, the commission works to address the common needs and problems of higher education in Northeast Ohio.

NOTES



Admissions, Registration and Money Matters

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Admissions

Admission to Tri-C is open to all high school graduates, anyone with documentation of successful GED completion, as well as to non-high school graduates participating in dual enrollment programs, and those 18 years of age or older.

It is not necessary to enroll in a specific program to be admitted to Tri-C. Students can enroll in as few as one or two courses to pursue a general interest, or can enroll in a two-year program to prepare to transfer to a four-year college, or choose a career/occupational program to prepare for employment.

The general admissions procedure of Tri-C does NOT ENSURE ADMITTANCE TO A PARTICULAR COURSE OR PROGRAM. In some instances, certain courses may be restricted to program majors. Admission to a specific program may be competitive or require specific minimum qualifications. Some students may be requested to enroll in special courses to eliminate deficiencies in academic preparation.

Applicants are urged to begin their admission process well in advance. High school students may apply in their senior year for entrance after high school graduation.

Students may attend more than one campus.

Student records are inactivated after a period of three consecutive years where no registration activity has occurred. Students with an inactive status must reapply for admission to the College on-line.

How to Apply

1. You can apply online at www.tri-c.edu/apply/ or in person at any campus Enrollment Center
2. Submit an official high school transcript and/or GED transcript. Request the high school or GED office to send transcript directly to the Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101-0966. GED transcript request forms are available in the Enrollment Center.
3. Submit official transcripts from all colleges and universities attended. Request former college or university officials to send transcripts directly to the Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101-0966.

Those wishing to attend Tri-C temporarily while attending another college or university are accepted as Transient (Visiting) students. It is strongly advised that you check with your college advisor concerning your home institution's procedures on Transient (Visiting) enrollment before you apply and enroll under this status.

Residency Requirements

Tri-C is supported by the taxpayers of Cuyahoga County and assisted by the State of Ohio. Students who are not

Cuyahoga County residents pay out-of-county or out-of-state fees. A student's official residency status is determined at the point of admission according to the residency policies of the State of Ohio, the Ohio Board of Regents and the Tri-C Board of Trustees. A change to a Cuyahoga County address does not constitute an automatic change to in-county residency for tuition purposes. It is the student's responsibility to request a change of residency status and provide supporting documentation to the Enrollment Center by the end of the first week for the full term of the semester in which the student is requesting a change of residency.

There are four categories, eight exemptions, one provision and one procedure under which a student may qualify for a change of residency status if the requirements of that category or exemption are satisfied. For more information, please go to www.tri-c.edu/apply/Pages/Residencyinformation.aspx or any campus Enrollment Center for more information.

Selective Service

All male U.S. citizens, and those with a permanent resident card between the age of 18 and 25, are required to register with Selective Service to qualify for in-county or in-state tuition rates and to be eligible for financial aid. The admission application requires a Selective Service Registration number or reason for exemption. Contact the Enrollment Center for information. In accordance with the Defense Department Authorization Act (Pub. L. 97-252) and Ohio Revised Code §3345.32, any student who is required to register with the Selective Service and fails to do so will be ineligible for federal and state of Ohio student financial aid funds. Contact the Student Financial Aid & Scholarship Office at any campus for further information.

International/Foreign Students

U.S. immigration laws impose a variety of requirements or restrictions on college enrollment. If you already have or are applying for the status of an F-1 nonimmigrant student, you must consult with a campus Special Student Services Coordinator before applying and registering for classes. F-1 students with an I-20 form from Tri-C must successfully complete a minimum of 12 credits per semester in order to maintain status. No more than one 3-credit course taken via distance learning/e-learning will apply towards the 12 credit minimum. A Special Student Services Coordinator is available at one of the campuses to address deadlines for F-1 international student admission and for other F-1 information. For information that involve maintaining your visa status such as work permission, authorized withdrawals, transfers and program extensions, please see the Special Student Services Coordinator at the campus listed on your I-20 or visit <http://www.tri-c.edu/apply/international/Pages/default.aspx> or one of the following offices :

East 216-987-2015 • Student Services Building, Rm 1602
Metro 216-987-4167 • Student Services Building, Rm G09
West 216-987-5203 • Student Services Building, Rm 220
Westshore 216-987-5884 • Enrollment Center
CCW 216-987-5884 • Enrollment Center

New Student Orientation

Our mandatory First Year Experience is designed to help students with understanding college expectations, program choices, and identifying what coursework is needed for enrollment. The First Year Experience begins with an in-person Orientation. Tri-C's New Student Orientation sessions are designed to assess, inform, and prepare students prior to beginning classes. Orientation is required for students new to college and recommended for students who have previously attended another college or university. Orientation provides students with information essential for successfully beginning and proceeding with their education at Tri-C. For more information about orientation and initial academic advising, contact the Counseling Department at 216-987-6000 and selecting option #4.

Transfer from Tri-C

The process of transferring courses from Tri-C to another college or university begins by meeting with a Tri-C counselor to ensure that the student enrolls in the appropriate courses.

It is the student's responsibility to schedule a meeting with the appropriate admissions office at the receiving college or university to ensure that all requirements for admission and transfer to the receiving school have been met. An official transcript of courses completed at Tri-C will be required by the receiving college or university. Transcripts can be ordered on line at: <http://www.tri-c.edu/transcripts/Pages/default.aspx> and cost is \$5.00 per transcript.

Because of the highly specialized nature of courses in career programs, many are not designed for transfer to a four-year institution. The exception to this is any course in an approved articulation agreement with a four-year college or university. A counselor can provide information about which programs offer this option. Students should also note that courses with numbers lower than 1000 usually do not transfer (see *Course Numbering* in this Catalog, pgs. 240 and 494).

Representatives from four-year colleges often visit the campuses to help Tri-C students plan their transfer programs. Acceptance of credit is always at the discretion of the receiving institution.

Transfer to Tri-C from another College

Students who wish to transfer to Tri-C should follow the established admissions procedures. The acceptance of transfer credits by Tri-C will be determined to the extent feasible within the context of agreements and working

relationships between Tri-C and other institutions of higher learning.

Tri-C has agreed to accept credit from colleges and universities accredited by regional accrediting associations. Tri-C also accepts credit from other institutions that can demonstrate that instruction provided at their institution meets Tri-C's standards.

Transfer credit may be awarded for courses earned through the college-level United States Armed Forces Institute (U.S.A.F.I.).

Transient (Visiting) Status

If a student wishes to take a course for credit at another institution while attending Tri-C, he or she may do so and can usually avoid having to go through the admissions procedure at the other institution by requesting Transient (Visiting) status as follows:

1. Request a **Transient (Visiting) Student** form from the Counseling Office.
2. Complete the form, obtain approval from a counselor, and return it to the Enrollment Center.
3. The Enrollment Center will confirm the student's status so that credit earned at the other institution can be properly credited to the student's permanent Tri-C record. This information will also be sent to the institution where the student is seeking Transient (Visiting) status.

Post-Secondary Enrollment Options Program/College Credit Plus

The Post-Secondary Enrollment Options Program (PSEOP) provides the opportunity for eligible high school students to earn college credit and/or high school credit. This experience is the beginning of the official academic record (transcript) of the student's college studies.

The PSEOP benefits students in several ways. Students take courses not available in their schools that complement their educational programs. This enriches the high school experience and encourages exploration of new fields through exposure to collegiate teaching methods, course content and procedures.

Consult with a high school counselor and the Special Student Services Coordinator at any campus for more information on admission criteria.

Program 60 Admission

Through Program 60, residents of Ohio aged 60 and older may register for regularly scheduled credit and non-credit classes on an audit, tuition-free, space-available basis. Registrations are processed in-person through the Enrollment Center on the date published for Program 60 registration in the semester Enrollment Guide. Program 60 registration will not be accepted prior to the dates advertised. Please confirm class availability with an Enrollment Center representative at time of registration.

College Tech Prep

The North Coast Tech Prep Partnership prepares students for high skill, high demand technical careers in a competitive global economy. Rigorous educational pathways emphasize math, science and technology and lead to postsecondary education. Educators, employers and communities collaborate to develop and deliver Tech Prep opportunities to all North Coast Tech Prep Partnership students.

The curriculum reflects real-world technical careers in high demand today. Programs may be offered in the following career fields: Agriculture and Environmental Systems, Arts and Communication, Business and Administrative Services, Construction Technologies, Education and Training, Engineering and Science Technologies, Finance, Government and Public Administration, Health Sciences, Hospitality and Tourism, Human Services, Information Technology, Law and Public Safety, Manufacturing Technologies, Marketing, and Transportation Systems.

Tri-C serves as a higher education partner of the North Coast Tech Prep Partnership, offering college credits to Tech Prep Students. Tech Prep enables a smooth transition from high school into two and four-year college degree programs.

All North Coast Tech Prep students have the opportunity to earn college credit while enrolled in a College Tech Prep program at their high school. Uncompromising standards, outstanding instruction, employer involvement, and parental guidance enable College Tech Prep students to enter postsecondary education without the need for remediation in math or English; and, earn state and/or nationally recognized industry specific certifications.

For more information regarding College Tech Prep, please call 216-987-4987 or visit www.techprep4u.com.

Career Technical Credit Transfer

Career Technical Credit Transfer (CT²) is a collaborative effort among the Ohio Board of Regents, the Ohio Department of Education's Office of Career-Technical & Adult Education, public secondary/adult career-technical education institutions and state supported institutions of higher education. The career technical credit transfer initiative ensures that students at an adult career-technical institution or secondary career-technical education institution can transfer successfully-completed technical courses that adhere to recognized industry standards to any state institution of higher education without unnecessary duplication or institutional barriers. Career Technical Credit Transfer is meant to complement the College Tech Prep program. See Appendix III for information on Career Technical Assurance Guides (CTAG) which identify the specific courses which are part of the statewide guarantee. Additional information can also be found on the Ohio Board of Regents web site: <https://ohiohighered.org/transfer/ct2>.

Registration

Students must be admitted to Tri-C before registering for classes. Students can register online or in-person at the Enrollment Center. Please visit <http://www.tri-c.edu/apply/new/> for complete registration instructions.

Waitlist

Waitlisting allows a student to add themselves to a waitlist for a class that has met its maximum enrollment limit. This gives a student the opportunity to register for a closed class when a seat becomes available.

When a seat becomes available, an email notification is sent to the student who is next in line on the waitlist. The student has exactly 18 hours, including weekends and other days the College is closed, to register for the course, or they will be dropped from the waitlist. Notifications are sent to the student's Tri-C email address. If the student does not register within the 18-hour period, the student will be dropped from the waitlist and the next student is notified. For additional information, go to <https://portal.tri-c.edu/waitlist/>.

Full-Time/Part-Time Status

A student must take at least 12 semester credits to be considered a full-time student. A counselor or advisor may recommend a heavier or lighter load depending on ability and/or past performance. A part-time student is one who is registered for 11 credits or less.

Each credit usually requires a minimum of two hours of outside study each week. A student employed full-time should probably not attempt to carry more than two courses per semester. A student who is working part-time might consider taking more than two courses per semester, depending on other demands made on her/his time.

Assessment Services

Tri-C will assess the English and mathematics skills of its students and prescribe enrollment in appropriate English and mathematics courses to maximize the student's opportunities for open access, equity, and academic excellence.

The English and mathematics placement tests are mandatory at Tri-C and are used to assess the skills of incoming students. Taking the placement tests seriously and doing well on them could reduce the number of courses that students are required to take.

Students must complete a preparation for placement testing experience and return completed sample test questions to a Campus Assessment Testing Center before taking the placement tests. Placement testing information and preparation materials are available at: <http://www.tri-c.edu/placement>.

Students must complete the College admission process before taking the assessment tests.

Assessment tests are administered on the computer and are not timed. Students may use the online calculator provided by the testing center for the math assessment.

Students should take assessment results to counseling appointments and/or orientation sessions.

Students may use qualifying ACT scores instead of taking the COMPASS math and English placement tests. Please contact an Assessment Center for information.

Persons holding a college degree may have the assessment/placement process waived.

Placement scores will be valid for two years from the date when the test was taken.

Students may retake their placement tests one time within two years. Additional attempts will cost \$10 each and will require the student to submit a petition to retest.

Students whose native language is not English must take the COMPASS English as a Second Language test.

Fast Forward

Fast Forward is a requirement at Tri-C which mandates students who place into developmental classes enroll and complete these classes during the first semester.

Completing developmental courses first increases students' basic skill levels, which can increase their chances of success in college-level coursework.

Cancelled Classes

Occasionally Tri-C must cancel a class because of insufficient enrollment. Every effort is made to notify students when this occurs. Those affected may register for a different class during the registration period.

Prerequisites

Prerequisites are established by each department, for each course in that department, to ensure that the student has an adequate and sufficient background to enroll in a course and achieve success. A passing grade of "C" or better is required. It is the student's responsibility to ensure that he or she has met the prerequisites for any course in which he or she enrolls. Prerequisites will be checked at the time of registration. If the student is unsure that the prerequisite has been met, he or she should consult with the academic department or Counseling Office prior to registering for that course. Note: Students who have taken prerequisite courses at Tri-C prior to Fall 1998 will be required to obtain an exception from a counselor or academic department in order to register for some courses.

Course Adjustment Period

Students may adjust their schedule during the first week of the term but can only enter a class that has not held the first scheduled session. Exceptions must be approved in writing by the academic Associate Dean responsible for the discipline. Contact the Enrollment Center or consult *my Tri-C space* for withdrawal/refund information.

Changes in Curriculum, Fees and Other Requirements

The Board of Trustees of the Cuyahoga Community College reserves the right to change, at any time and without notice, graduation requirements, fees and other charges, curriculum, course structure and content, and such other matters as may be within its control, notwithstanding any information set forth in this Catalog.

Money Matters

Tuition and Fees

Tri-C, supported by the taxpayers of Cuyahoga County and assisted by the State of Ohio, maintains modest tuition and fees, both of which are subject to review during any academic year by the Board of Trustees and may be changed at its discretion with the approval of the Ohio Board of Regents.

For current tuition and fees, please visit: www.tri-c.edu/payingforcollege/Pages/TuitionPaymentSchedule.aspx.

Refunds

Refunds of tuition and fees for courses of academic credit will be made when students withdraw from a course and have already paid the tuition in full. Students who choose not to complete a course *must officially withdraw* from the course. Tri-C is not obligated to refund students who have not withdrawn or not paid the tuition, even if they did not attend a class.

The following schedule governs all refunds of tuition and fees for full-term courses of academic credit:

Refund Period.....	Full Semester
First Week.....	100%
Second Week.....	70%
Third Week.....	50%
Fourth Week.....	25%
Fifth Week and after	none

The refund schedule for all parts of semester and the Summer Session will be determined in proportion to the full semester schedule.

Refunds of 100% of the instructional, general and supplemental fees are granted if Tri-C cancels a course, or if student withdraws during the 100% refund period (see preceding schedule).

No refunds are granted if a student is dismissed from Tri-C for disciplinary reasons.

Student Financial Aid Scholarships (SFAS)

Financial aid consisting of scholarships, grants, loans and part-time student employment, is designed to supplement a student's own resources. Student financial aid may be available for an entire academic year or for part of the year.

Per federal and state regulations, primary considerations in selecting financial aid recipients are based on financial need, U.S. citizenship or eligible non-citizenship status, and the potential to succeed in an academic program at Tri-C. Some types of financial aid are based on criteria other than financial need.

Check out Financial Aid TV - a collection of video clips providing quick answers to common questions. This online service is available 24 hours a day, seven days a week at: <http://tri-c.financialaidtv.com>.

SFAS Application Procedures for Financial Aid

Students applying for financial aid are required to complete the Free Application for Federal Student Aid (FAFSA) form. Students can complete the FAFSA online at www.fafsa.gov. Student can obtain complete information about procedures and financial aid application process on the Student Financial Aid & Scholarships Office Web site at: www.tri-c.edu/financialassistance.

Students are strongly encouraged to complete the FAFSA and all required verification documentation at least eight weeks prior to the priority deadlines listed below:

Summer Session	April 1
Fall Semester	July 1
Spring Semester	December 1

Description of Financial Aid Options

State Grant Program

Ohio College Opportunity Grants (OCOG): Tri-C students are no longer eligible to receive state grant aid from the Ohio Board of Regents unless they qualify for the Ohio Education Training Voucher funded by the Orphan Foundation of America.

Federal Programs

Pell Grants: The federal government makes Pell Grant funds available for tuition and other college-related expenses to undergraduate students who demonstrate financial need and maintain satisfactory academic progress in their course of study. Pell Grant recipients are eligible to receive awards from this program to

complete the first undergraduate bachelor's degree. Note that, effective July 1, 2012 students are limited to 12 full-time semesters (24 equivalent part-time semesters) of Pell Grant eligibility. Students apply for Federal Pell Grants by completing the FAFSA.

Federal Supplemental Educational Opportunity Grants (FSEOG): The FSEOG Program provides grants to students who demonstrate exceptional financial need to help meet their costs of post-secondary education. FSEOG recipients are eligible to receive awards from this program for the period required to complete the first undergraduate bachelor's degree. Students apply for FSEOG funds by completing the FAFSA. Awards are contingent on availability of funds. Students who may be eligible for this program are encouraged to complete the FAFSA as early as possible each year to ensure full consideration.

Federal Direct Student Loan Program: These are also known as Stafford Loans. Students who apply for loans will be awarded either a subsidized or unsubsidized loan based on financial need. Students must be enrolled in at least six credits and maintain satisfactory academic progress in their course of study. During the in-school period, all interest is paid by the federal government on subsidized loans. Interest on unsubsidized loans will accrue from the time the loan is disbursed to the student. Loan amounts are based on year in college and dependency status as established by the U. S. Department of Education. Repayment begins six months after the student leaves school or drops below 6 credits. Students must complete the FAFSA to be considered for the Direct Loan Program.

Parents may also choose to borrow a Parent Loan (PLUS) for students who are enrolled in at least six credits. Parent Loan applications are available in any Student Financial Aid & Scholarships Office and are awarded based on an approved credit check. Students are required to complete the FAFSA to apply for the PLUS Loan to ensure that the student has been considered for all types of aid programs.

Federal Work-Study Program (FWS): This federal program provides funds for part-time student employment, up to 20 hours per week at Tri-C or at a community service agency. Students apply for FWS funds by completing the FAFSA. Awards are contingent on availability of funds and need. Students who may be eligible for this program are encouraged to complete the FAFSA as early as possible each year to ensure full consideration.

Federal Perkins Loan Program: Students who apply for Perkins loans will be awarded based on financial need. Students must be enrolled in at least six credits and maintain satisfactory academic progress in their course of study. During the in-school period and through the grace period after the borrower leaves school, all interest is paid by the federal government on subsidized

loans. Loan amounts are based on term enrollment. Repayment begins six months after the student leaves school or drops below 6 credits. Students must complete the FAFSA to be considered for the Perkins Loan Program. In some instances, based on student's course of study, part of the Perkins Loan may be forgiven or cancelled after employment in selected fields of study and a period of repayment of the loan. Contact the Student Financial Aid & Scholarships Office for more information.

Scholarships

Tri-C offers scholarships for students who participate in various programs. Scholarships include the Academic Excellence Scholarship, Honors Program Scholarship, Athletic Scholarship, Journalism Scholarship, Student Senate Scholarship, and the Trio-Access Scholarship. Visit the scholarship website at www.tri-c.edu/scholarships or contact any Student Financial Aid & Scholarships Office for the awarding criteria for each scholarship.

The Cuyahoga Community College Foundation offers a variety of scholarship opportunities from numerous scholarship funds for Tri-C students enrolled in various disciplines. These scholarship opportunities have been created and supported through the generosity of many donors who believe in Tri-C's mission and the importance of providing access to education to members of our community.

You can apply for Tri-C Foundation Scholarships by completing both the Free Application for Federal Student Aid (FAFSA) and the Tri-C Foundation Scholarship application. The Foundation online scholarship application is at www.tri-c.edu/scholarships and the FAFSA is online at www.fafsa.gov.

Some scholarships may require a special application in addition to the Tri-C Foundation Scholarship Application. These are noted in the criteria at www.tri-c.edu/scholarships.

The total scholarship award may not exceed the Cost of Attendance as determined by federal regulations and will be considered with all other financial aid you may receive.

Lifetime Learning Credit

Taxpayers may be able to claim a lifetime learning credit of up to \$2,000 for qualified education expenses paid for all students enrolled in eligible educational institutions. There is no limit on the number of years the Lifetime Learning Credit can be claimed for each student. However, a taxpayer cannot claim American Opportunity Credit and Lifetime Learning Credits for the same student in one year. If you pay qualified education expenses for more than one student in the same year, you can choose to take credits on a per-student, per-year basis. For more information on the Lifetime Learning Credit, please contact the Internal Revenue Service or your tax preparer.

American Opportunity Credit

The American Opportunity Credit (AOC) makes tax credit benefits available to a broader range of taxpayers, including many with higher incomes and those who owe no tax. In addition to direct educational costs, the AOC, also adds required course materials to the list of qualifying expenses and allows the credit to be claimed for four post-secondary education years with maximum annual credit of \$2,500 per student. For more information, on the American Opportunity Credit, please contact the Internal Revenue Service or your tax preparer.



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Student Information

Access to Student Records

Tri-C, as part of its responsibilities to students, must maintain accurate and confidential student records. Tri-C recognizes the rights of students to have access to their educational records and to limit such access by others in accordance with the Family Educational Rights and Privacy Act (FERPA). These rights are spelled out in Tri-C's procedure on student education records.

Student records, with certain exceptions, will not be released without prior consent of the student. Students have the right to review and question the content of their educational records within a reasonable time after making a request for such a review. If there are any questions as to the accuracy or appropriateness of the records that cannot be resolved informally, an opportunity for a hearing on the matter is provided. Students wishing to review their educational records may apply to the appropriate Enrollment Center for details regarding Tri-C procedures designed to expedite their request.

Change of Address

Students are required to notify Tri-C of an address change. Updates can be made on *my Tri-C space*. A change of address does not automatically change residency status for the benefit of tuition charges. See the section titled "Residency Requirements" for information about changing residency status for tuition purposes.

Directory Information

Tri-C has designated the following information as directory information and will disclose this information without prior written consent unless otherwise instructed by the student: student name, address (local and home), program of study (including college of enrollment, major and campus), enrollment status (full time, part time, withdrawn), dates of attendance, degrees, honors, and awards received. The following will be disclosed for members of athletic teams only: previous educational institutions attended, participation in officially recognized activities and sports, weight, and height.

Students who wish to have this information kept confidential should contact the Enrollment Center.

First Year Experience

Cuyahoga Community College wants students to succeed in their pursuit of degrees, certificates or transfer programs. To help students begin with the right support, information, tools and connections, the College offers a mandatory First Year Experience. The First Year Experience includes various touch points. New Student Orientation allows students to select the right courses, learn important steps for success, and identify a major or program. New Student Orientation is offered through the

Counseling offices at all the campuses. The second touch point is New Student Convocation.

New Student Convocation welcomes new students prior to their first semester. Students have the opportunity to hear from faculty on expectations. The Campus President and Deans provide guidance on the higher education experience, and student ambassadors/peer mentors share their own tips, experiences and advice. A connection to the academic division selected by the students is provided by having faculty, deans and other academic representatives on site to discuss program information.

The third touch point is a First Year Success Seminar; a course offered during the student's first semester. In this comprehensive experience, assessments of information and skills are used to make a successful transition into higher education. The course leads to an integration of knowledge gained academically, personally, and professionally. Emphasis is placed on documenting student engagement with appropriate College services, processes, faculty and staff. Content includes becoming aware of available student support services, selecting a career path, developing an academic plan, and building time management and study skills.

My Tri-C Card Photo Identification

All Tri-C students are required to have a photo identification card called the My Tri-C Card. Cards are obtained at the Enrollment Center located on each campus upon registration. Cards are required for registration activities, library checkout and admission to athletic, cultural and social events. Use of the My Tri-C Card also allows special discounts and incentives at all campus dining retail operations, Java Cities, vending machines and the College Bookstores. Tri-C authorities may ask to see an ID card at any time; therefore, it is important that it is always with you. Cards are non-transferable. There is a \$10 charge to replace a My Tri-C Card.

my Tri-C space and Student Email

my Tri-C space is a portal that provides the primary point of access, a virtual "front door", to resources students use on a regular basis. This includes links to registration, grades, financial aid, Blackboard, announcements, campus news, links to government sites, or group activities. The information is personalized and organized by tabs, which are easily navigated. Each tab has various channels which allow quick access to important information.

Tri-C issues an email account to each student. To access your Tri-C email account, click on the EMAIL ICON in the upper right-hand corner of *my Tri-C space*. You can view and update your email accounts by going to the My Info tab in the Student Records channel and selecting the link for "Updating Your Personal Information". **Your**

Tri-C student email account is the official and primary communication method between Tri-C and students.

For information or help with *my Tri-C space* or your Tri-C email account, visit <http://cctss.tri-c.edu>.

Housing

Tri-C is a commuter institution primarily designed to serve residents of Cuyahoga County and, therefore, does not provide housing for its students.

Institutional Fee

The College charges an Institutional Fee automatically at the time of registration based on the credit hours registered. This fee is designed to provide students with unlimited access to all campuses, recreational facilities, Technology Learning Centers, libraries and campus special events. This fee will be adjusted when courses are added or dropped in accordance with the withdrawal and refund deadlines and percentages. Below is the fee structure:

- 1-3 credit hours (\$10.00)
- 4-11 credit hours (\$50.00)
- 12+ credit hours (\$70.00)

No vehicle is to be left on Tri-C property longer than 24 hours. Vehicles are subject to tow at the owner's expense thereafter. If a vehicle must be left overnight, notify the department of Campus Police and Security Services. Tri-C is officially closed one hour after classes end. Citations may be paid by mail or in-person at any Enrollment Center. Appeals must be made within 10 days of the notice of violation by either coming to the department of Campus Police and Security Services or using the online parking appeal form located at: www.tri-c.edu/parking.

Penalty for non-payment may include: grades withheld; registration held; vehicle impounded; warrant citation (Municipal Court). Parking and traffic rules and regulations have been adopted by the Cuyahoga Community College Board of Trustees to regulate traffic and parking on Tri-C property. Motorcycles, motorbikes and motor scooters are subject to the same regulations as automobiles. The motor vehicle laws of the State of Ohio are in full effect on Tri-C property.

Updating Student Information

my Tri-C space provides personal student information such as registration, student schedules, student records, DARS (Degree Audit Reporting System), grades and financial aid information. Students are able to update personal information such as last name, address, phone, email, emergency contact and academic major. Look for these options on the Student Records channel located on the My Info tab of *my Tri-C space*.

Student Services

College Bookstores

College Bookstores are located at the four campuses to serve students, faculty and staff by providing required textbooks and supplies in a customer service-focused retail environment and for an additional convenience, the College Bookstores also offer online ordering of textbooks either from the external Tri-C Web site or *my Tri-C space*. A satellite College Bookstore is offered at Corporate College West (CCW) one week prior to the beginning of each CCW credit semester. Service for the Brunswick site is available at the Western Campus. The College Bookstores carry a selection of general reading books, Tri-C apparel and gifts. Hours of operation are posted at each of the College Bookstores and may vary during the course of a semester.

Campus Dining Facilities

Campus dining facilities at the Eastern, Metropolitan and Western campuses offer assorted beverages and a wide variety of freshly prepared entrees including hot breakfast items, pizza, specialty and grilled sandwiches, salads and desserts. Java City Specialty Coffee operations can be found at the Eastern, Metropolitan and Western campuses. Hours of operation are posted at each operation and on the Campus Dining Web site page. The Westshore Campus features a convenience store within the College Bookstore which offers grab-and-go items and freshly brewed coffee. In addition, vending machines offering a variety of foods, snacks and beverages are located at multiple sites throughout each campus, the Unified Technologies Center and the Corporate Colleges. Use of the My Tri-C Card also allows special discounts and incentives at all campus dining retail operations, Java Cities, vending machines and the College Bookstores. A Dining Dollars Meal Plan for use in the Campus Dining facilities is available as part of the My Tri-C Card program.

For a map of locations, current hours, and contact information go to <https://portal.tri-c.edu/campusdining>.

College Information & Enrollment Support Center

The College Information & Enrollment Support Center provides convenient enrollment support services to Tri-C's new, continuing and returning students. Customer service representatives will provide prompt responses to inquiries about admission to the college, class registration, balances or information on available academic and student services at Tri-C. The College Information & Enrollment Support Center also accepts credit card payments towards registration and fees.

Chat live with a representative at www.tri-c.edu/CustomerService, via email at CustomerService@tri-c.edu, or call 216-987-6000.

Check out **ask TRI-C** for quick answers to common questions. This online service is available 24 hours a day, seven days a week at: www.tri-c.edu/ask.

Counseling

The mission of the Counseling Department is to provide accessible counseling and advising services for current, former and prospective students. Professional counselors at each of the campuses can assist students in:

- Clarifying academic and career goals
- Mapping program of study and complementary experiences
- Developing strategies to build on strengths and to overcome barriers
- Accessing available collegiate and community resources to support reaching these goals.

Academic, career and personal concerns are addressed as appropriate and needed. Direct student services are provided through individual and group counseling, general studies courses, and student success workshops. The Counseling Department also conducts the orientation program for new students. Students are encouraged to meet with a counselor on a regular basis to facilitate progress from initial matriculation through program completion and graduation.

Career Centers

The Career Centers are a college-wide network committed to providing a variety of free services to support, and prepare students with knowledge and skills that will guide them to achievement of their professional goals, and dreams. Our students, alumni, veterans, dislocated workers, and community members have the opportunity to learn skills that will enable them to launch a successful job search through informative workshops and individualized career coaching. The career centers are located on each Tri-C campus and are staffed with experienced career coaches. The services provided at each career center include skills and interests assessments, co-op and internship identification and preparation, job shadowing program, career development and job coaching, job search preparation, online career tools, assistance with creating resumes and cover letters, interviewing preparation, and job acquisition assistance.

The Career Centers also partner with employers from all of Northeast Ohio to identify experiential learning opportunities, connect you with an employer to participate in a co-op, or internship, and provide you with career-related resources. In addition, they provide linkages to other college-wide services for enrollment, financial aid, counseling, and transfer centers.

The Career Centers are your resource for all experiential learning, and career-related needs. Visit www.tri-c.edu/careerservices for more information.

Disability Services for Students - Access Program

The Access Program provides classroom accommodations and support for students with disabilities enrolled at Tri-C. To receive services, students must make an appointment to meet with an Access Student Advisor and present documentation of disability. Some services may require eight weeks or more to arrange. Services are individualized and may include advising, test proctoring, books in alternate format, assistive technology and sign language interpreting. The Access Program is funded by the U.S. Department of Education, the State of Ohio and Tri-C. Visit our Web site at: www.tri-c.edu/apply/specialinterest/disabilities, or call for additional information.

<u>Campus</u>	<u>Voice</u>	<u>TTY</u>
East	216-987-2052	216-987-2230
Metro	216-987-4344	216-987-4048
West	216-987-5079	216-987-5117
Westshore	216-987-5079	216-987-5117

Student Support Services (SSS)

The SSS programs provide academic and other support services to Metropolitan and Western Campus students until they graduate and/or transfer to a four-year institution. Services include: academic and financial aid advising, career workshops, tutoring, study groups, and transfer assistance. Eligible participants include low-income and first-generation college students with a need for academic support services. SSS is funded by the U.S. Department of Education (TRIO) and Cuyahoga Community College. Call 216-987-4149 (Metro), 216-987-5360 (West) or visit: www.tri-c.edu/studentuccess/Pages/StudentSupportServices.

Veterans Affairs

Since 1963, Tri-C has provided veterans of the U.S. Armed Forces with access to affordable education and workforce training programs that allow them to transition successfully from military to civilian life. To date, more than 24,000 veterans and service members have attended Tri-C. The population of veterans in Northeast Ohio who are seeking higher education and workforce training is increasing. An estimated 1,000 service men and women and 500 reservists from the region are on active duty. Approximately 1,500 veterans have returned to Northeast Ohio over the past two years and approximately 5,000 veterans will return over the next four years. Of that number, there are 1,000 currently enrolled in courses at Tri-C.

Like other area schools, Tri-C stands ready to meet the needs of veterans through high quality traditional educational opportunities leading to associate degrees which often result in upward movement for many graduates to four-year degree programs.

Tri-C veterans' services and programs are distinguished from other area college veteran programs because:

- Tri-C offers veterans wishing to quickly transition back to the workforce a variety of fast-track certification and degree programs that are aligned with Northeast Ohio workforce needs (e.g., manufacturing and applied technologies, skilled trades training, and health care).
- The Tri-C Veterans Upward Bound Program has a 35+ year history of providing support services to eligible veterans not yet ready for college to complete preparatory coursework, develop academic skills, and remain enrolled in and graduate from post-secondary education.
- Tri-C is committed to professional development that enables Tri-C faculty, staff and administrators to address veteran transition issues.
- Tri-C is committed to serving the families of veterans. During 2013-2014, Tri-C hosted four major events for military families. Family support and outreach is critical in that it is often a family member who helps a veteran make the decision to return to school.

Through Tri-C's Veterans Initiative and its Veterans Services & Programs Office, Tri-C continues in its commitment to enhance its outreach to veterans and their families and to customize its support services to serve those who have served so proudly. Education and support services include:

- Benefits acquisition (GI Bill)
- Veterans Upward Bound Program
- Veterans Today Club
- Registration and Enrollment Support
- Assessment and Counseling
- Special classroom needs (ACCESS)
- Occupational Career Programs
- Baccalaureate transfer/liberal arts curriculum
- Bachelor's degree completion
- Post-degree professional certificates
- Apprenticeship Programs/Applied Industrial Tech
- Career Planning
- Scholarship Opportunities
- Student Life Outreach and Activities
- Distance Learning/eLearning opportunities
- Access to Community Resources
- Access to Employment Opportunities

Whether a discharged veteran, still serving on active duty, or a member of the Guard and Reserve, you and your family are welcomed home at Tri-C. For further information visit: www.tri-c.edu/veterans/.

Student Life

Tri-C recognizes the educational, recreational and social values of a well-integrated program of student activities.

Student Life, Athletics and Recreation provides diverse programs and services to enhance the overall social, cultural and educational growth of students by promoting learning and development outside of the classroom. The programs are designed to promote maximum interaction among students and between students, faculty and staff. Tri-C programs are developed to offer a diverse co-curricular experience and in response to student requests and needs. Activities offered may vary each semester depending upon scheduling, availability and student feedback.

Activities, Clubs and Organizations

Every student is welcome to participate in a variety of activities ranging from student government, diversity programming, student clubs and organizations, as well as numerous Tri-C and campus committees.

Students can participate in co-curricular activities including student leadership certification, etiquette training, planning lectures, dramas, entertainment and various educational programs.

Student organizations cover a wide spectrum of interests to meet the needs of students. Further information may be obtained from the Student Life and Athletics Office on each campus.

The following clubs and organizations may be found on one or more of the Tri-C campuses each semester:

- Access Club
- Action Zone Student Programming Board
- Active Minds at Cuyahoga Community College
- American Sign Language Club
- American Student Interior Design Student Chapter
- Anime and Gaming Club
- Assoc. of Diagnostic Medical Imaging Technology Club
- Biology Club
- Business Club
- Business Focus Club
- Campus Activities Board
- Campus Crusade for Christ
- Campus Ministry
- Chess Club
- Collegiate 100
- Commuter Club
- Computer Club

- Dance Club
- Dietetic Tech Club
- Digital Media Group
- Drama Club
- Tri-C Environmental Action Group
- ENACTUS F.K.A. SIFE
- Eta Sigma Delta Hospitality Management Honor Society
- Extreme Wellness Club
- Focus on Christ Club
- French Club
- Graphics Arts Club
- HOLA Club
- History Club
- Hospitality Management Student Club
- INTG-A (Interior Design Association)
- Information Technology Student Association
- International Club
- Japanese Culture Club
- Journalism Club
- Lambda Gay-Straight Alliance
- Mathematics Club
- Medical Laboratory Technology Club
- Multicultural International Club
- Music Club
- N.E.R.D. (Neo Entertainment and Retro-Gaming Division) Club
- Nursing Student Association
- Occupational Therapy Assistant Clubs
- PA Student Falkenstein Society
- Pharmacy Club
- Phi Theta Kappa Honor Society
- Philosophy Club
- P.L.A.N.E.T. (Professional Landcare Network) Tri-C Chapter
- Printmaking Club
- Psychology Club
- Physical Therapy Club
- Physician Assistants/Surgical Assistants Club
- Pottery Club
- Religious Clubs
- Science Club
- Sociology Club
- Student Newspaper, *The Voice*
- Students In Free Enterprise (S.I.F.E.)
- Students for the Advancement of Respiratory Therapy Education
- Student Peace Alliance
- Student Peace Alliance, Tri-C East
- Surgical Technology Club
- The Philosophy and Religious Studies Forum Club
- Theatre Arts Club
- Tri-C Entrepreneur Club
- Tri-C Extreme Wellness Club

- Tri-C West Post-Secondary Enrollment Options Club
- Veterans Today Club
- Vet-Tech Club
- Visual G Club

Intercollegiate Athletics

Tri-C is a member of the National Junior College Athletic Association (NJCAA) and participates with other two-year colleges from Ohio, Indiana and Michigan. Independent contests are scheduled with colleges from Pennsylvania, New York, Kentucky and Illinois.

The official colors of Tri-C athletic programs are red, white and blue. The name of Tri-C's teams is the "Challengers." Intercollegiate sports offered are: men's soccer, women's volleyball, women's cross country, women's track, men's baseball, women's softball, men's basketball and women's basketball.

Phi Theta Kappa

Phi Theta Kappa is the international honor society for students in community colleges. The purpose of Phi Theta Kappa is to recognize and encourage scholarship among two-year college students. To achieve this purpose, it provides opportunities for the development of leadership and service, an intellectual climate for exchange of ideas and ideals, lively fellowship for scholars, and stimulation of interest in continuing academic excellence.

Phi Theta Kappa's mission is two-fold: 1) recognize and encourage the academic achievement of two-year college students; and 2) provide opportunities for individual growth and development through participation in honors, leadership, service and fellowship programming. Society membership opens opportunities for competitive national and regional scholarships, including more than \$37 million in transfer scholarships available at over 700 four-year colleges and universities. Visit www.ptk.org and www.ohioptk.org for more information.

Tri-C has four chapters: Alpha Epsilon Eta (East), Alpha Zeta Delta (Metro), Chi Omega (West) and Beta Upsilon Beta (Westshore). Students are invited to join the society based on completion of at least 12 credits at the 1000-2000 level with a cumulative GPA of 3.5 or better. A one-time membership fee helps to support chapter activities as well as the regional and national organizations.

Interested students should contact the faculty advisor at their respective campus; contact information can be found on the Tri-C Phi Theta Kappa Web page: <http://www.tri-c.edu/Programs/Honors/Pages/PhiThetaKappa.aspx>.

Recreation Facilities

Tri-C is committed to providing students, faculty and staff with quality athletics and recreation programs. Tri-C

offers athletics and recreation designed to develop an understanding and appreciation of physical fitness and improve the students' recreational and athletic skills.

The Eastern Campus indoor facilities include a gymnasium, new swimming pool exercise room, weight room with state-of-the-art fitness equipment, secure locker rooms and shower facilities, dance studio, and a newly resurfaced indoor track. Outdoor facilities include an all-weather track and an open field.

The Metropolitan Campus indoor facilities include a gymnasium, swimming pool, weight training room, dance studio, and locker and shower rooms. The new Recreation & Wellness Center (MRC) is equipped with state-of-the-art fitness equipment, studio classroom space for group instruction, locker room facilities and a demonstration kitchen for workshops/seminars. Outdoor facilities include an all-weather track and soccer field.

The indoor facilities at the Western Campus include a fitness center, gymnasium, swimming pool, weight training room, locker and shower rooms. Outdoor facilities provided are an all-weather track, soccer fields, lighted baseball field and softball field.

Cuyahoga Community College Foundation

The Cuyahoga Community College (Tri-C) Foundation was chartered in 1973 as a 501(c)(3) charitable organization. The mission of the Tri-C Foundation is to create funding opportunities for scholarships and educational program development and enhancement at Cuyahoga Community College.

Thanks to the continued financial support of business partners, corporations, foundations, governmental agencies, friends, Tri-C employees, alumni and philanthropic organizations throughout the area, the Tri-C Foundation provides scholarships to many outstanding students with financial need. The need is greater than ever for enhancing access to higher education for many students in our community, who without some financial aid cannot access or continue their education.

Both the Tri-C Foundation and the College work closely with the community to build strong partnerships and seek financial support for development and enhancement of educational programs in response to workforce and student needs.

For more than 50 years, investments in Tri-C have paid immense dividends. Tri-C is the largest community college in Ohio, serving more than 60,000 students each year on its campuses, at multiple off-campus sites, and through online learning.

For more information or to make a contribution to the Tri-C Foundation, contact the Office of Resource Development and Tri-C Foundation at 216-987-4868 or visit:

www.tri-c.edu/foundation.

Cuyahoga Community College Alumni Initiative

The Cuyahoga Community College Foundation is pleased to lead Tri-C's Alumni Initiative. Alumni are valued members of our College family, contributing to a vibrant community. Alumni of Cuyahoga Community College include professionals across the region, the country, and the world. They represent all ages and every sector of the economy, as well as the cultural diversity of our region. Tri-C is proud to have awarded more than 80,000 degrees and certificates since the College's first commencement ceremony.

Cuyahoga Community College offers its alumni a wide range of benefits, including:

- An alumni Website www.tri-c.edu/alumni
- An alumni mentoring network to support student success
- Job search, career resources and professional networking opportunities
- E-newsletter sharing news including professional achievements of alumni and College information, and discounts.

To get involved in this initiative, contact Alumni Relations at 216-987-4870, via email at alumnirelations@tri-c.edu or visit www.tri-c.edu/alumni to learn more.



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Student Rights and Responsibilities

For a comprehensive list of all Tri-C procedures, please refer to the Student Handbook. The Handbook may be accessed by logging into *my Tri-C space* and clicking on the Student Services tab. The Student Handbook is in the College Guidelines channel.

Student Conduct Code

The Student Conduct Code is established to advance the mission of Tri-C, to foster the scholarly and civic development of students in a safe and secure learning environment, and to protect the people, property and processes that support Tri-C and its mission. The Student Conduct Code identifies prohibited conduct and clarifies when the Code applies to student behavior. The Student Conduct Code closely relates to the Tri-C procedure titled, "Student Judicial System" which sets forth the penalties imposed for prohibited conduct and establishes the disciplinary process for alleged violations.

The Student Conduct Code and Student Judicial System may be found in the Student Handbook that is mentioned above.

Attendance

Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Federal regulations require that students attend all registered classes in order to receive federal financial aid funds. Students who do not attend the full session are responsible for withdrawing from courses. Tri-C is required to insure that students receive financial aid only for courses that they attend and complete. Students who fail to complete at least one course may be required to repay all or a portion of their federal financial aid funds and may be ineligible to receive future federal financial aid awards. Students who withdraw from classes prior to completing more than 60 percent of their enrolled class time may be subject to the required federal refund policy.

Tri-C is responsible for identifying students who have not attended or logged into a class for which they are registered. At the conclusion of the first two weeks of a semester, instructors may report any registered students who have "Never Attended" a class so that those reported students will be administratively withdrawn from that class. However, it is the student's responsibility to officially withdraw from any class which she/he is no longer attending by the established withdrawal deadline or risk receiving a failing grade in that class.

If illness or emergency should necessitate a brief absence from class, students should confer with instructors upon

their return. Students having problems with class work because of a prolonged absence should confer with the instructor or a counselor.

Emergencies, Catastrophic Events and Severe Weather Closings

Tri-C is committed to providing students with the maximum number of scheduled instructional days possible. In the instance of an emergency, catastrophic event or severe weather conditions, Tri-C initiates a procedure to determine if classes can continue as scheduled.

Three criteria determine if classes will be held: 1) the municipalities and State Department of Transportation can confirm prior to 6 a.m. that the main roads and highways will be accessible; 2) local governments and/or Homeland Security alert status; 3) Campus Plant Operations can confirm that all buildings have heat, water, sufficient parking areas and clear access routes to campus buildings. If these three criteria can be fulfilled, classes will be held. Emergency closing announcements will be broadcast over local television and radio stations and their websites. The Tri-C Web site and *my Tri-C space* will also announce closing information. Closing announcements will also be distributed as a Tri-C Alert, with a phone call or text message to the Alert number provided by employees and students. This message will always come from 1-866-989-ALRT(2578). In order to receive a call or text, you must have provided an updated Alert number in your personal information. Look for this option on the Student Records channel located on the My Info tab of *my Tri-C space*. Note: *Anyone who has opted out of the Tri-C Alert system will not receive notification from the college.*

Student Right-to-Know and Campus Security Act

Tri-C complies with all federal regulations concerning the Student Right-to-Know and Campus Security Act. For specific information contact your Campus Police and Security Services office or visit the Campus Police Web site at: www.tri-c.edu/administrative/campuspolice.

Academic Information

Advanced Placement (AP)

Advanced Placement Exams are administered in the high schools and are usually culminating exams for high school students enrolled in honors courses. Students in Ohio who take a College Board Advanced Placement examination and score at least a "3" are guaranteed college credit, usually towards their general education curriculum, upon entering an Ohio Public Institution of Higher Education. A complete list of all the AP Credit Awards at Cuyahoga Community College can be found at: <https://transfercredit.ohio.gov/ap/3?13580401706643>.

Change of Major Field of Study

Students may change their major field of study anytime during their enrollment at Tri-C. Students are able to update their academic major by submitting changes through *my Tri-C space*. It is suggested that students check with a counselor/advisor before changing majors.

Comparable Credit Procedure

Comparable credit is defined as academic credit awarded to registered students upon demonstration of knowledge equivalent to that gained through college courses. A student must be currently enrolled and in a minimum of 12 semester hours or have completed a minimum of 20 semester credit hours at Tri-C and be in good standing (minimum 2.0), before applying for prior learning credit. Students may obtain a maximum of 30 semester credits through one or a combination of the recognized options for comparable credit. Awarded comparable credit will not affect a student's grade point average or quality points. Also, the awarded comparable credit will not substitute for the required 20 semester credits of residency needed for college graduation. See an academic counselor for additional requirements. Standardized methods of evaluation are used to measure students' demonstrated knowledge of a subject area. Upon completion, the student will be awarded the same academic credit as that designated for the course.

Comparable Credit Options

Recognized options under which comparable credit may be awarded include:

College Level Examination Program (CLEP) - The CLEP includes general and subject-specific exams in a variety of areas. Tri-C will award comparable academic credit to students for successful completion of the CLEP general and subject area examinations. Official transcripts must be submitted to the Enrollment Center with a letter requesting the posting of CLEP credit.

Defense Activity for Non-Traditional Education Support (DANTES) - This is a group of standardized tests developed for the voluntary education programs of the U.S. Armed Forces which have now been made available for civilian use. The civilian tests are administered through Educational Testing Services (ETS).

American Council on Education (ACE) - Alternative educational learning related to subject areas, courses, and programs of study will be evaluated using authorized publications and methods for effecting assessment.

(1) Military Training Credit

Prior learning credit can be awarded for training a student received while a member of the armed forces. Credit is awarded based on recommendations of the American Council on Education (ACE). Publication: *American Council on Education's Handbook to the Guide to Evaluation of Educational Experiences in the Armed Forces*

- (2) Standardized Training and Certification Programs
There are numerous standard training and certification programs for which you may earn credit for prior learning. Credit is awarded based on recommendation of the American Council on Education (ACE). Publication: *American Council on Education National Guide to Educational Credit for Training Programs*

Credit by Exam (CBE) - There are many courses offered by Tri-C for which credit for prior learning may be awarded by taking and passing a comprehensive exam on the course subject. Students may be given the opportunity to demonstrate, by examination, college-level knowledge in a particular subject area. CBE for a particular course may be taken only once.

By-Pass Credit

For By-Pass Credit, comparable credit is awarded for achieving competence equivalent to a course or a sequence of courses applicable to fulfilling an academic degree requirement. Students must document the requisite knowledge and skills considered for comparable credit. By-Pass Credit may be awarded for learning attained through documented, valid academic and/or equivalent work experience, including professional certification/licensing, and completion of formal training programs. Formal training programs include, but are not limited to, hospital-based and corporate education where requisite knowledge, skills, and competencies are documented.

Cross-registration

Qualifying full-time (currently registered for 12 or more credits) Tri-C students may register for one course per semester during the regular academic year, on a space-available basis, at any of the institutions participating in the Cross-registration Program. Area colleges and universities participating in this program are Baldwin-Wallace College, Case Western Reserve University, Cleveland Institute of Art, Cleveland State University, John Carroll University, Kent State University, Notre Dame College, Ursuline College and Youngstown State University. These host institutions waive tuition and general fee charges for courses taken as part of the Cross-registration Program. However, Tri-C students are billed for the number of credits taken at the host institution using the Tri-C tuition rate once confirmation of registration is received from the host institution. Tuition and fees assessed for a Cross-registration Program course will be equal to tuition and fees paid by other Tri-C students with the same total number of credits and residency status.

Participation must be approved by Tri-C and the availability of the course must be verified by the host institution. Program applications and registration information are available in the Enrollment Center on each campus. Cross-registration is not available during the Summer Session.

Online and Blended Learning

As an alternative to the traditional classroom environment, Tri-C also offers more than 800 distance learning courses. For students who are self-directed and motivated, distance learning can be a flexible and effective way to earn college credit. Students must be able to use a computer, navigate the Internet and use email to successfully complete a course.

Registration procedures and cost per credit are the same as on-campus courses. For more information about Online and Blended Learning courses:

- Visit www.tri-c.edu/onlinelearning
- Call the Office of eLearning & Innovation at: 216-987-4257
- Email elarning@tri-c.edu

Instructional modes used for the delivery of Distance Learning courses include:

Online (OL)

Online courses use Blackboard, an Internet-based learning management system, for course delivery and assignments.

- The Blackboard course site is available 24/7.
- Students should access course daily.
- Information regarding on-campus requirements and proctored testing is available at www.tri-c.edu/onlinelearning.
- Students must use Tri-C email. It is the official and primary method of communication between you and the College.
- Students must be able to use a Web browser and modify their settings relating to security, pop-ups and firewall settings.
- Students should know how to create, modify and attach documents.
- Students should know how to save, upload and download files.

Proctored Testing

Proctored testing may be required in some Online and Blended Learning courses, particularly Math courses. A "suitable proctored environment" is an environment directly monitored by an instructor, testing center administrator or other learning provider, in a physical or virtual setting and approved by faculty. While proctors must be approved by the instructor, some suitable proctors may include Tri-C Assessment Centers, other accredited college or university testing centers, and military education centers. If the testing center requires a fee, it is the student's responsibility to pay that fee.

Blended Learning (BL)

Blended Learning describes courses that blend online learning with face-to-face classroom instruction, significantly reducing the amount of time spent in the classroom.

- Attend class on-campus and complete course assignments via the computer. (*On-campus requirement is determined by instructor.*)
- Students must be able to use a computer, navigate the Internet and use email.

Distance Learning

Cable College (CC)

Cable College allows students to take credit courses and choose whether to participate "live" in a classroom through cable television and the Internet or watch replays at their convenience online.

- Cable College courses are broadcast on Tri-C's SmartTV and video streamed on the SmartTV Web site at: www.tri-c.edu/onlinelearning/pages/smarttv.aspx.
- Students enrolled in Cable College are able to replay their courses at any time at: <http://tricsmarttv.pegcentral.com>.
- SmartTV is Cuyahoga Community College's television station and is broadcast on Time Warner cable's digital channel 195 (must have cable box or a digital TV to view) in the City of Cleveland, on Cox Cable digital Channel 216 in the following communities: Broadview Heights, Brooklyn Heights, Fairview Park, Lakewood, Olmsted Falls, Olmsted Township, Parma, Parma Heights, Rocky River, Seven Hills and on Brunswick Area Television Channel 24.

Independent Learning (IL)

Independent Learning courses are designed as alternatives to on-campus classroom instruction, offering maximum scheduling flexibility for students interested in independent study.

- Students complete assignments from the text and study guide and complete exams on-campus.
- IL courses require viewing videos or listening to audios. Course materials are available at Tri-C libraries, some for check out. Some programs are available for purchase at the Tri-C Bookstores.
- Some video programs are available on the Internet through Video on Demand (VoD), requiring Windows Media Player and a high-speed (cable or DSL) connection to the Internet.
- It is recommended students attend on-campus seminars, offered via closed-circuit television to enable participation from any Tri-C campus, which provides an opportunity for class discussion and course review.

Degree Audit Reporting System (DARS) & My Academic Plan (MAP)

The Degree Audit Reporting System is a software tool which significantly eases the academic advising process for students. DARS & MAP compare academic program requirements against a student's academic history. The resulting report lists courses taken that apply toward graduation, courses yet to be taken and courses that do not apply to the program major. The ability of both students and staff to obtain this information is part of an effective academic advising program. DARS is for all students enrolled prior to Fall 2014. MAP is the tool for students new to the College Fall 2014.

Grading System

A (Excellent-4pts.): A grade of "A" indicates that a student has demonstrated excellent academic performance; it carries a weight of four quality points for every credit of the course in which the grade is earned.

B (Good-3pts.): A grade of "B" indicates that a student has demonstrated good academic performance; it carries a weight of three quality points for every credit of the course in which the grade is earned.

C (Average-2pts.): A grade of "C" indicates that a student has demonstrated average academic performance; it carries a weight of two quality points for every credit of the course in which the grade is earned.

D (Below Average-1pt.): A grade of "D" indicates that a student has demonstrated below average academic performance; it carries a weight of one quality point for every credit of the course in which the grade is earned.

F (Failure-0pts.): A grade of "F" indicates that a student has failed to demonstrate minimal academic performance; it carries a weight of zero quality points for each credit of the course in which the grade is earned.

P (Pass-0pts.): A grade of "P" indicates that a student has passed and completed a course; it carries a weight of zero quality points for each credit of the course in which the grade is earned. "P" represents "C" or better work. The credits earned are awarded, but are not included in the computation of a student's cumulative grade point average.

NP (No Pass-0pts.): A grade of "NP" indicates that a student has not passed and completed a course; it carries a weight of zero quality points for each credit hour of the course in which the grade is earned. "NP" represents "D" or "F" work; however, the "NP" is not included in the computation of a student's cumulative grade point average.

AU (Audit-0pts.): A notation of "AU" indicates that a student was granted permission to register for a credit course and attend that course on an audit basis with no

academic credits to be awarded. A student **may not** convert registration from credit to audit status or audit to credit status after classes begin.

I (Incomplete-0pts.): A notation of "I" indicates that a student has not completed all course requirements as a result of circumstances judged by the instructor to be beyond the student's control. A student must complete all course requirements no later than the end of the sixth week of the academic term following the semester in which the "I" was noted. Failure to complete such requirements will result in an "F" (Failing) grade.

I/E: I (Include) and E (Exclude) course symbols:

A course considered eligible for repeat is one that is an identical course (number, title and credits) or one officially identified as equivalent by the College Catalog (effective Fall 1998). Specialized courses with allowable accrued credits will be considered for repeat calculations only upon written request and validation by the appropriate academic area of identical topic repeat.

NA (Never Attended): Never attended is reported when a student has never attended a class in person or logged on to a class that is electronically delivered. When reported as never attended, the student is dropped from the course.

T (Transfer Credit): A notation of "T" indicates that a student has been awarded credit for course work which has been evaluated and accepted in transfer from another institution of higher education in accordance with Tri-C's policy on transfer credit from other institutions. The transfer credits awarded shall not be included in the computation of a student's cumulative grade-point average.

USF (Military Physical Education Credit-0pts.):

"USF" indicates awarded credit in recognition of physical education training received by a student who has served on active duty in the military services of the U.S. for at least 365 days as documented on the student's DD214.

W (Withdrawal-0pts.): A notation of "W" indicates a student's withdrawal from a course in accordance with Tri-C's withdrawal policy.

WF (Withdrawal for Stopped Attending - 0 pts.):

A grade notation of "WF", noted with a specific date, indicates that a student stopped attending class on the noted date. "WF" will count in attempted hours, carries a weight of zero quality points and will be calculated into GPA as such. It indicates a student's failure of the course due to stopped attending.

APR (Academic Progress Reporting): Academic Progress Reporting is reported for the purpose of informing students how they are doing with regard to meeting the course requirements at the approximate mid-point of the course. The grades of either "S" (Satisfactory) or "U" (Unsatisfactory) are assigned by faculty. Students

Academic Information

are encouraged to make an appointment to see an academic counselor if a "U" grade is received in any course. Student can view their (current term only) APR grades via *My Tri-C space* on the My Info Tab. APR grades do not appear on the student's permanent record.

Articulation & Comparable Credit Grading

AC (Articulation Credit)

ACE (American Council on Education)

AP (Advanced Placement)

BYP (By-Pass)

CBE (Credit by Examination)

CEL (Council for Adult and Experiential Learning)

CLP (College Level Examination Program)

HAC (High School Articulation Credit)

TPC (Tech Prep Credit)

SLC (Service Learning Credit)

A notation of "ACE," "AP," "BYP," "CBE," and/or "CLP" indicates that credit has been awarded by Tri-C as a result of a student successfully passing a college-wide equivalency exam or other recognized method of evaluation by policy. No quality points will be awarded for credits earned through successful completion of appropriate examinations, and the credits earned will not be included in the computation of a student's cumulative grade point average. Comparable credits awarded do not count towards the 20-hour residency requirement for graduation.

Grade Point Average

Grade point average (GPA) is a measure of scholastic performance. It is computed by dividing the sum of the total quality points earned by the total units of credits (quarter or semester) attempted. The following example illustrates the computation of GPA:

Grade	Points	x	Credit	= Total Points
A	4		3	12
B	3		3	9
C	2		4	8
F	0		3	0
			13	29

$$\text{GPA} = 29/13 = 2.23$$

Grade point average can be computed for any given semester or for the total of all credits attempted. When a grade point average is computed for the total of all of the credits attempted, it is referred to as the cumulative grade point average.

Courses in which the letter symbols S, U, P, NP or the action symbols AC, BYP, CCT, CEL, HAC, TCP, USF AU, W, CBE, I, IP, T, ACE, AP, CLP or USAF are noted will not be included in the computation of a student's grade point average.

Students who receive official permission to postpone an examination are assigned an "I" (Incomplete) as the grade for that course. STUDENTS MUST PERSONALLY

REQUEST AN INCOMPLETE GRADE FROM THEIR INSTRUCTORS. It is not granted automatically. Incomplete grades can be removed by completing the examination or other requirements no later than the end of the sixth week of the following academic term. Failure to do so will result in an "F" (Failure) grade.

Academic Probation or Dismissal

A student will be placed on probation if her/his cumulative grade point average is less than shown below:

Total Semester Cumulative Credits Attempted:	Grade Point Average
0-11 inclusive	.75
12-29 inclusive	1.50
30-50 inclusive	1.75
51 and above	2.00

A student will be dismissed when these four conditions are met:

- Twelve or more semester credits have been attempted at Tri-C.
- Student has been on the academic status of Probation for two consecutive semesters at Tri-C.
- Cumulative GPA is less than shown above.
- Term GPA is less than 2.0.

A student will continue on probation until attaining the cumulative GPA listed above, as long as term GPA is greater than 2.00.

Readmission after Academic Dismissal

A student who has been dismissed from Tri-C must petition for academic re-admission. The first time a student has been academically dismissed from Tri-C he/she will not be permitted to enroll for the next semester. A student dismissed for a second or subsequent time will not be permitted to enroll for two semesters.

A Petition for Readmission form must be submitted at least ten (10) business days prior to the start of the semester. Forms can be obtained from the Enrollment Center or Counseling Offices.

Upon readmission after academic dismissal, students must:

- meet with an academic counselor,
- complete an academic plan, and
- register for no more than nine credit hours as recommended by a counselor.

Once readmitted, the academic status is "Probation". The student must maintain a 2.0 grade point average in the courses taken after readmission.

Pass/No Pass Grade Option

An alternative to a letter grade (A, B, C, D and F) called Pass/No Pass grade option allows students who wish to explore a discipline and/or course to register without the penalty of a grade impacting their grade point average. A student can elect up to 12 credits taken Pass/No Pass to fulfill degree requirements at Tri-C. Whereas audited courses do not count, students may select up to 12 credits of Pass/No Pass that may transfer to another college or university as electives.

Considerations before selecting a P/NP Grade:

Some restricted/selective admission programs require traditional letter grades (A, B, C, D) for their core course requirements. Courses used as prerequisites or core courses for Health Career and Nursing programs must have a traditional letter grade. The P/NP grading option for prerequisites and core courses will not be accepted by the Health Career and Nursing programs. Students are responsible for consulting with their program manager or counselor to determine Pass/No Pass grading options.

The P/NP grade option cannot be converted back to a letter grade nor can a letter grade option be converted to the P/NP option after the 100% refund period. If a letter grade is required for a course taken as Pass/No Pass, the course must be retaken.

International students and Post-Secondary Enrollment Options program students are not eligible to utilize the Pass/No Pass option.

Courses taken Pass/No Pass count toward financial aid enrollment requirements.

Auditing a Course

Auditing a course means that a student attends classes but is not required to submit assignments or take examinations. Students, therefore, receive neither a grade nor course credit. Students must indicate their intention to audit a course on a separate audit form to be completed during the audit registration period. The auditing fee is the same as for a student regularly enrolled for credit. Credit courses or Pass/No Pass courses cannot be converted to audit status nor can audited courses be converted to credit status or Pass/No Pass status after audit registration ends.

Currently enrolled Tri-C students are permitted to audit one or more courses. Careful consideration is advised before requesting permission to audit a course. When uncertain whether to audit a course, students should see a counselor. Registration for auditing a course or courses must be completed through in-person registration only. The audited courses may be added on the dates published in the semester Enrollment Guide.

Honors Program

Tri-C offers an Honors Program that provides an academically rewarding and enriching learning experience for all qualified students. The Honors Program is separate from, but complements, the Phi Theta Kappa Honors Society. Students in the Honors Program are invited to participate in various cultural events, co-curricular experiences and Honors colloquia to supplement the Honors classes they take as part of the Program. Membership is free and scholarships are available. Students intending to transfer to a four-year institution after completing their coursework at Tri-C are especially encouraged to consider the Honors Program. More information, qualification criteria and the online membership application can be found on the Honors Program Web page: www.tri-c.edu/honors. The Assistant Dean - Honors and Experiential Learning Programs and the campus Honors Faculty Coordinators listed are available to assist by phone, email or in person.

Academic Honors: Dean's List

Dean's List recognizes students whose academic achievements are considered outstanding. The list includes all students who have earned a grade point average of 3.50 or higher and completed 12 or more credits during the preceding term.

Graduation with Honors

Tri-C encourages academic progress and success for its students, and those who excel in their academic pursuits are recognized for their achievements.

Academic achievement is determined by a student's grades and by the fulfillment of all graduation requirements.

The following designations appear on the commencement program, all diplomas and official College transcripts based on cumulative grade point averages for Tri-C course work only:

Cum laude: 3.50 - 3.69

Magna cum laude: 3.70 - 3.89

Summa cum laude 3.90 - 4.00

The above designations appear in the commencement program for fall, spring and summer graduates (based on fall cumulative grade point average).

Upon confirmation that a student is eligible to receive a degree, the specific designations above are appended to the student's official academic college transcripts.

Repeating a Course

Students who have received credit for a course with a grade of "D" or higher or "P" may only repeat a course one additional time to improve the grade and receive federal financial aid funds for that course. When an identical course is repeated, the highest grade will be used in computing the cumulative grade point average.

Academic Information

“P” and “NP” courses are not counted toward grade point average calculations. Federal financial aid funds may be used only one time to repeat previously passed courses. Students who have passed a course with a grade of “D” or “P” and have received credit for the course, may only repeat the course one time to improve the grade and receive federal financial aid funds to retake a previously passed course.

Credit for courses will be awarded only once in the semester in which the highest grade was awarded for the course, unless the course description specifically states that additional credit may be earned.

Students planning to transfer to another college or university are cautioned that the receiving institution may use ALL grades earned to compute a grade point average for admission purposes. Also, since repeating a course may have an adverse effect on financial aid eligibility, students are urged to consult with the Student Financial Aid & Scholarships Office and a counselor before repeating a course.

Fresh Start – GPA Adjustment Procedure for Student Success

The Fresh Start Procedure allows Tri-C to consider a GPA adjustment for Tri-C students who have received failing grades. This procedure is not applicable to those students previously awarded this consideration.

For detailed information, contact the Counseling Office at: 216-987-6000.

Transcripts of Grades

Student Academic Performance Information is available on *my Tri-C space* under the My Info tab/ Student Records channel. Students can view this Unofficial Educational Record at any time. Academic Progress Reports and Final Grades are available on dates indicated in the Academic Calendar. Students must file all grade disputes within 60 calendar days after the disputed grade is recorded. Students may request official academic transcripts via *my Tri-C space*, My Info tab. Students receive one free transcript upon graduation.

Withdrawal

Students may withdraw from any semester course prior to the end of week 12 of the full semester or 80 percent of any instructional part of semester. Specific withdrawal dates are available by semester in any Enrollment Center or published in the semester Enrollment Guide. Withdrawal and Refund Deadlines are available on the Info Tab on *My Tri-C space* or at the following:

https://portal.tri-c.edu/payment_info/docs/refund4.htm

Students must submit a completed withdrawal form or follow the approved electronic process when available. Students may also withdraw by letter or fax sent directly to the Enrollment Center. The postmark of the letter or date of the fax determines the refund amount.

Fax number for the Enrollment Centers:

Eastern Campus: 216-987-2214
Metropolitan Campus: 216-987-3283
Western Campus 216-987-5071
Westshore Campus 216-987-5294

When withdrawing by letter or fax, request must include:

Name
Student Tri-C ID number
Phone number
Semester of the course being dropped
Course number(s)
Student's signature

The refund schedule for all parts of semester and the Summer Session is determined in proportion to the full semester schedule as established by College procedure.

Withdrawal from a course prior to the last day of the second week of the semester will have no notation made in permanent records; withdrawal thereafter will be noted with a “W.”

Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Tri-C is responsible for identifying students who have not attended or logged into a class for which they are registered. At the conclusion of the first two weeks of a semester, instructors may report any registered students who have “Never Attended” a class so that those reported students will be administratively withdrawn from that class. However, it is the student's responsibility to withdraw from any class which she/he is no longer attending or risk receiving a failing grade in that class. Students wishing to withdraw must complete and submit the appropriate Tri-C form by the established withdrawal deadline.

Withdrawals related to student conduct are administrative withdrawals processed by the Dean of Student Affairs.

All transactions involving withdrawal from courses shall be done in writing and on forms provided by Tri-C or through electronic means. A student's failure to attend classes shall not constitute an official withdrawal.

Petition for Withdrawal Exception

Beyond week 12 or 80 percent of any instructional part of semester, a student who is unable to complete the current semester for reasons beyond her/his control (such as an emergency medical condition) may petition for late withdrawal by completing a Petition for Withdrawal Exception and submitting substantiating documentation to the Enrollment Center. The Withdrawal Exception Review Committee meets monthly to review petitions. Submission of a Petition for Withdrawal Exception does not guarantee approval. A recommendation by the

committee to deny a request is final. A recommendation by the committee to approve a request must also have the appropriate instructor and academic dean's approval. Students must submit a Withdrawal Exception Petition by the end of the next academic semester. Conditions approved under past withdrawal petitions may not be approved again.

Academic Support Services

Cooperative Education/Experiential Learning

The Cooperative Education (Co-op) Program supplements formal classroom education with actual on-the-job experience in a variety of academic disciplines, typically within the timeframe of an academic semester. Work may be either temporary or long-term depending upon an agreement between the student, the employer and Tri-C. While working in a co-op assignment, students receive pay for the work they do, earn academic credit for documented learning derived from their experiences, and are evaluated by employers and the co-op instructor. Students may earn a maximum of nine credits for cooperative work experience, which may be applied toward certain degree requirements.

There are two types of co-op work schedules available: part time and full time, either of which can be coordinated with academic schedules.

To participate in the Cooperative Education work experience program, students must:

1. Be currently enrolled at least part-time at Tri-C.
2. Be working toward a degree or program certification.
3. Have completed 12 or more credits of college coursework, transfer credits included.
4. Have completed at least two courses related to the major field or have equivalent experience (subject to employer's requirements).
5. Have a GPA of 2.75 or better.
6. Complete the co-op application process and orientation process.
7. Complete and sign an experiential learning (co-op) agreement.

The benefits of co-op include paid, hands-on experience in the field of study before graduation, the ability to earn academic credit in the major and the opportunity to network with employers. For more information, contact the Career Center at 866-933-5180, or visit:

www.tri-c.edu/careerservices.

Tutoring and Testing Services

Tri-C's Tutoring and Testing Services are administered through the Learning Centers at all four campuses. Free tutoring is available for many courses at Tri-C; however, tutoring may not be available for every course. Students must be currently enrolled in the course for which they request tutoring. The Learning Centers offer all students the opportunity to improve their basic skills, enhance their understanding of college courses, develop their study skills, and maximize their academic achievement through free tutoring and study skills workshops. Assessment, make-up, and eLearning course tests are administered through the Learning Centers on a walk-in basis during testing hours.

Learning Commons

Library Services, Academic Computing Services and Media Services are located on each campus and are collectively known as the Learning Commons. The Learning Commons provide a full range of support for students and faculty.

Library

The campus libraries provide access to a variety of resources and information with the assistance of professional librarians. The electronic college-wide catalog can be used to gain access to the Tri-C collection of over 160,000 books, periodicals, newspapers and non-print media; materials from other area libraries; and OhioLINK resources. The Ohio Library and Information Network, or OhioLINK, is a consortium of libraries from 91 academic institutions across the state including public and private colleges and universities, as well as community and technical colleges. OhioLINK provides students and faculty easy access to information with over 100 online reference and research databases that can be accessed anywhere via the Internet, as well as rapid delivery of library materials from any member library in the state.

Academic Computing Services

Academic Computing Services maintain the College's academic technology infrastructure and house the academic classroom computer labs and open lab at their respective campus. The labs provide access to Windows (and Mac at some sites) computers with high speed Internet and the licensed software applications needed to complete academic coursework.

Media Services

Media Services maintains each campus' classroom presentation technology and provide a wide array of audiovisual support and media development services.

Student-Faculty Conferences

Tri-C faculty members maintain scheduled office hours to confer with students regarding class work and related matters. Schedules of office hours are announced by instructors in their classes and posted in the faculty office

areas. Students are urged to familiarize themselves with the schedules and to contact their instructors during those hours.

College Pathway Programs (CPP)

The Office of College Pathway Programs (CPP) is a component of Cuyahoga Community College's Division of Access, Learning, & Success. The unit provides services to both current and prospective students, including recruitment and enrollment growth initiatives, and scholastic K-12 programming. The unit also administers the Aeronautics Education Laboratory through the Science, Engineering, Math, and Aerospace Academy Program, the Cuyahoga Community College/Central State University Dual Enrollment Program, and the Cuyahoga Community College Freedom Project. Included in the Office of CPP are the Youth & Early College, Innovative & Emerging, and Adult-Focused program units. CPP provides programs and services to improve access, retention, and success for those in targeted groups (low-income, first generation, minority, women in transition, youth, recipients of public resources, etc.) among the eligible adult and youth population of the Greater Cleveland area. CPP offers programs for adults and youth. Individual programs are further described below. Visit the CPP programs page at: <http://www.tri-c.edu/pathways>.

Youth & Early College Programs, a Unit of the Office of College Pathway Programs

Youth and Early College Programs share common goals: 1) to increase educational opportunities for youth, 2) to assist students in gaining access to higher education, 3) to motivate students to participate in college courses while in high school, and 4) to provide opportunities to foster student success through interventions such as assessment, coaching, and mentoring.

College Success Program (CS)

CS is a partnership between Cuyahoga Community College and the Cleveland Metropolitan School District (CMSD) to prepare CMSD students to successfully transition into college level courses. Many high school graduates are placing into remedial level math and English college course, costing them additional time and money and making it less likely that they will finish college. The CS program seeks to remedy these Math and English deficiencies in CMSD graduates by increasing the number of students who successfully progress through high school, graduate, enroll in postsecondary education at college-level, and succeed in their college coursework. CS consists of three components: Installing and utilizing College Success Outreach Centers in six selected CMSD High Schools, inviting students to attend the College Success Summer Academy at the Cuyahoga Community College Metropolitan Campus, and

providing a unique First Year Experience for students transitioning to Cuyahoga Community College upon graduating from high school. This program is funded by The Cleveland Foundation. For more information, please call 216-987-4196.

Educational Talent Search (ETS)

Educational Talent Search is a federally-funded pre-college program created in 1965 as part of the Higher Education Act. It is designed to motivate and develop the skills necessary for students to be successful in secondary school, graduate, and enroll in an institution of post-secondary education. Being among the pioneer TRIO programs in the country, Cuyahoga Community College's Educational Talent Search program has been in existence since 1968. Students in grades 6 through 12 are eligible to participate. Students from the Cleveland Metropolitan School District that are low-income and first-generation are targeted for participation. Educational Talent Search student advisors and instructional assistants provide classroom workshops on careers, financial aid, test preparation for OGT, PSAT, ACT, SAT, and COMPASS tests, and individual counseling and tutoring sessions to assist students in achieving their pre-college and college entrance goals. Students also participate in college tours, as well as cultural activities to assist in their personal development. Talent Search serves 1,250 students annually. For more information, please call 216-987-6310.

High Tech Academy (HTA)

HTA is a dual enrollment program in which Cleveland Metropolitan School District high school students in grades 10 through 12 attend a half-day of school at their high schools, and then attend college classes on the Metropolitan Campus of Cuyahoga Community College. HTA offers students a rigorous curriculum, and helps to develop students' academic and technical skills as well as leadership skills. Students can choose classes from various HTA pathways, including college preparatory (liberal arts), engineering technology, information technology, business management, and allied health (Physician Assistant Program). Faculty and administrators from Cuyahoga Community College and the Cleveland Metropolitan School District coordinate programming for more than 250 high school students annually. Upon high school graduation, HTA graduates are able to continue their college studies toward earning an associate's degree at Cuyahoga Community College, transfer to four-year colleges and universities or enter the workforce. Established in 2000 with major support from National City and NASA Goddard Space Flight Center, and now with generous support from PNC, the program has allowed more than 850 high school students to earn college credit. Nearly 50 students have earned an associate degree at the same time as earning their high school diplomas. For more information regarding HTA, please call 216-987-3549.

Freedom Project/Freedom School (FP)

This unique project is a series of three programs linked to form a year-round learning process. The project is designed to actively engage high school students, grades 8 to 12, in a holistic approach to achieving academic success. Typically, students enter during the summer session of Freedom Schools. Freedom Schools is an initiative of the Children's Defense Fund national operation and uses reading-based curriculum developed and taught by specially trained college students. Students are equipped with innovative approaches to problem solving that enhance their ability to be successful in their "home" school and lives.

The Freedom Partnerships component creates bonds with students' home schools and parents and also includes elements of the Freedom Schools approach to student engagement and development. Certified teachers assist the program leaders and serve as "academic success coaches" to students who may need more intense academic support in reading, language arts or mathematics during the academic year. Students who exhibit potential leadership skills and academic ability in Freedom Schools and Freedom Partnerships are encouraged to participate in the third arm of this project, Freedom Leadership Academy.

Freedom Leadership Academy includes elements of both of its sister programs and builds additional leadership, communication and civic engagement abilities. In addition to working side-by-side with college students, participants in upper-level classes may also be enrolled in Cuyahoga Community College credit or certificate classes to begin their college career while in high school. For FY14 the program is supported by the Cleveland Foundation and TreuMart. For more information regarding the Tri-C Freedom Project, please call 216-987-3260.

Science, Engineering, Mathematics and Aerospace Academy (SEMMA)

The Science, Engineering, Mathematics, and Aerospace Academy is a national, innovative program designed to increase the participation and retention of historically underserved and underrepresented K-12 youth in the areas of science, technology, engineering and mathematics (STEM). SEMMA's ultimate goal is to increase the number of students in the identified populations who enroll in STEM-related academic majors in college. A hands-on, inquiry-based, cooperative learning environment is implemented through Saturday classes during the fall, winter, and spring at Cuyahoga Community College. During the summer semester, camp experiences are available for student enrichment. Middle and high school students are engaged in learning activities in the SEMMA Aerospace Education Laboratory (AEL), a state-of-the-art, computerized classroom that uses cutting-edge technologies to model real-world challenges in aviation, robotics and microgravity research. All students enrolled during fall, winter, and

spring are engaged in StarLab (portable planetarium) activities. Established as the first SEMMA site in the nation with generous support from NASA, the program serves a minimum of 625 students each program year. The program is supported by the Alcoa Foundation, Cleveland Chapter of CHUMS, Martha Jennings Foundation and the Thomas H. White Foundation. For more information regarding SEMAA, please call 216-987-6301 or email semaa@tri-c.edu.

Upward Bound (UB)

UB is a pre-college program for high school students. The program helps students to develop the skills and motivation needed to succeed in post-secondary education. UB provides college, career and financial aid counseling, tutoring, field trips and test preparation for the OGT, ACT and SAT tests. Students also attend a six-week Summer Session and graduating seniors attend an eight-week bridge component. UB is funded by the U.S. Department of Education. Call 216-987-4958 or visit UB at: www.tri-c.edu/apply/hsstudents/upwardbound/.

Upward Bound Math/Science (UBMS)

Upward Bound Math/Science is a federally-funded, pre-college program designed to assist high school students interested in science, technology, engineering, mathematics (STEM) careers. Serving Cleveland Metropolitan School District high school students at East Technical High School, Garrett Morgan Cleveland School of Science Academy, and Lincoln-West High School, UBMS provides individualized and small-group educational services that support students in building a mastery of core content knowledge. In addition to year-round academic planning and advising, students are engaged in authentic hands-on, project-based learning activities, monthly educational workshops, and a six-week Summer STEM Academy.

To prepare students for academic success in STEM in high school and college, UBMS provides an academically enriching and rigorous math and science curriculum year-round. Students receive computer and technology training along with standardized test preparation. College, career, financial literacy, and scholarship assistance also provides students and families with information and resources to support their pursuit of a post-secondary education. For more information, please contact the Upward Bound Math/Science office at 216-987-4927 or visit www.tri-c.edu/ubms.

Innovative and Emerging Programs

Gateway to College National Network

Gateway to College helps high school dropouts (ages 16-21) and students on the verge of dropping out to earn a high school diploma while also earning college credits. By providing another path to a high school diploma and the opportunity to go to college, Gateway to College is helping thousands of young people rewrite the story of their lives. This program is funded by the Gateway to College National Network. For more information, please call 216-987-0242.

North Coast Tech Prep

The Tech Prep Program enables high school students in grades 11 and 12 to participate in state-approved career and technical programs to earn articulated college credit upon high school graduation. The curriculum reflects real-world technical careers in high demand today. Tech Prep enables a smooth transition from high school into 2- and 4-year college degree programs. For more information, please call 216-987-4987.

Central State University & Historically Black Colleges and Universities (HBCU) Transfer Program

The Central State University Project, is a partnership between Cuyahoga Community College (Tri-C) and Central State University located in Wilberforce, Ohio. Student participants are urged to complete their Associate degree, and then move directly into their junior year at Central State. Students majoring in most areas can also earn credits through the dual enrollment component. Transferring credits is a seamless process through this program.

A major advantage for student participants in Project programming is saving thousands of dollars by beginning their coursework while in high school or at the community college. For more information, please call 216-987-3260.

Adult-Focused Programs

Hispanic / Latino Engagement

The College Pathway Programs team works collaboratively with the Hispanic Council at Cuyahoga Community College and the Promise Academy. This program works to support and increase high school graduation, and access to academic and workforce development programs. For more information, please call 216-987-3260.

Faith-Based & Community Initiative

The goal of this initiative is to provide training and information to faith-based institutions so they can assist parishioners and community members in achieving their academic, educational and workforce related aspirations.

The desired outcome of these partnerships will be to strengthen connections between Cuyahoga Community College and the faith community. Similar programs in other colleges have recognized that individuals who

receive critical information about education and jobs in a familiar location from someone they know are more likely to enroll, focus to finish high school, GED, college or workforce programs. For more information, please call 216-987-3260.

Promise Connection

A collaborative project between Promise Academy, a Cleveland Metropolitan School District sponsored charter school, and Cuyahoga Community College that opens the windows of opportunity for continued education and training of Promise Academy students, and prepares them to enter the workforce with education and training beyond the high school diploma. For more information, please call 216-987-0242.

Educational Opportunity Center (EOC)

Educational Opportunity Center offers free enrollment assistance to 1200 Cuyahoga County adults annually, ages 19 and over, who wish to further their education. EOC advisors meet with individuals by appointment and provide information, workshops, and services to groups. Call EOC at 216-987-6305 to schedule a meeting with an EOC advisor to receive services such as: assistance enrolling in GED classes; college, certificate, or vocational training programs; academic and career advising; admissions information; and applying for Federal Student Aid and scholarships. EOC provides referrals to social service and community resources. Assistance in completing financial aid and admissions applications is available. All services are free. The U.S. Department of Education and Cuyahoga Community College fund the EOC. Call 216-987-6305 for more information.

Women in Transition (WIT)

Women In Transition is a free non-credit course that is designed to help adult women move their lives forward through education and training. Participants receive basic computer training, help in career exploration, financial literacy enrichment, personal development and soft skill training. Upon completing the program, participants are equipped to continue their education, enter the workforce, understand financial aid options, identify marketable skills and career opportunities.

For FY 14, the Women In Transition Program is funded by Cuyahoga Community College, Carl D Perkins Act, TJX Foundation, The Foundation of Community Betterment, The Foes Foundation, The Weal Foundation, The SK Wellman Foundation, and others. There is both a day and evening class available. The class runs every eight weeks during the school year on three Cuyahoga Community College campuses; Eastern 216-987-2272, Metropolitan 216-987-4187, and Western 216-987-5091 or visit WIT on the web at www.tri-c.edu/wit.

Adult College Access Programs

ABLE (Adult Basic and Literacy Education)

The Adult Basic and Literacy Education courses provide foundation math, reading and writing skills, high school graduate refresher courses, assistance with The Official GED® Test preparation and transition into employment and college.

GED Testing Services

GED Testing Services are available to adult learners who desire to take the official GED test. The services are designed for adults that have not graduated from an accredited high school or home school participants. Official GED testing is offered via the computer by registering through MyGED.com. Testing is done at the Unified Technology Center through Pearson-Vue, and also at various off-campus sites. All testing is scheduled by appointment and through MyGED.com. The cost is \$120. Transcript can also be requested through MyGED.com

English for Speakers of Other Languages (ESOL)

Our English for Speakers of Other Languages (ESOL) focus on improving English skills through speaking, listening, reading and writing while providing instruction in grammar, conversation and civics.

Veterans Upward Bound (VUB)

VUB provides a variety of support services to assist veteran students in the successful pursuit and completion of their educational and career goals. VUB offers an academic enrichment program featuring refresher courses in Mathematics, Science, English and basic Computer Skills. Five nine-week sessions are offered per year as well as a six-week accelerated Summer Bridge Program. Other services include: academic and financial aid advising; career and personal counseling; tutoring; Veterans Affairs benefits information; college transfer assistance; scholarship opportunities; peer mentoring; and a veterans club. All services are free to eligible participants at the Eastern, Metropolitan and Western Campuses. DD-214 and income verification are required to apply. The VUB Program is funded by the U.S. Department of Education (TRIO). Call 216-987-4938 or visit VUB at: www.tri-c.edu/apply/specialinterest/veterans/Pages/VeteransUpwardBound.

Degree and Certificate Program Requirements

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Degree Programs

Cuyahoga Community College offers the following five (5) degrees: Associate of Arts, Associate of Science, Associate of Applied Business, Associate of Applied Science and Associate of Technical Study.

All curriculum is approved through the established College curriculum approval process. Students petitioning for a degree must submit a petition form to the Enrollment Center according to the graduation deadline published in the Academic Calendar.

General Education Statement of Purpose

General Education refers to that broad body of knowledge and skills common to all educated people, regardless of their professions. A general education enables students to demonstrate measurable knowledge and intellectual skills that generate a lifelong habit of inquiry and decision-making. It fosters a better understanding of the world's cultural complexity. It prepares students to be more responsible citizens and more judicious inhabitants of the world. The General Education curriculum of Cuyahoga Community College prepares students for a more fulfilling life.

General Education Outcomes

As a graduate of Cuyahoga Community College, students will become members of a community of learners who are knowledgeable and competent in the following areas:

Communication

Organize images, symbols and standard language in written, verbal and non-verbal formats to communicate clearly and concisely with an intended audience.

Critical Thinking

Integrate, analyze and synthesize ideas from multiple disciplines in order to make evidence-based decisions and find rational solutions to problems; manipulate symbols from a variety of systems such as visual, verbal, mathematical and logical.

Information Literacy

Determine where and how to acquire, evaluate, and ethically use information from multiple sources for academic success and life-long learning.

Global Awareness

Identify the influence that global integrated systems – such as economic, social, cultural, environmental, technological and political – have on students' day-to-day lives; explain how changes in these systems affect their families, communities, employers and careers; adapt to a rapidly changing global community.

Cultural Sensitivity

Demonstrate sensitivity to the unique views and values of individuals from different cultures (others and their own), both within and beyond the United States; respectfully acknowledge the similarities and differences between cultural groups; address the cultural stereotypes and misconceptions that exist in society.

Civic Responsibility

Demonstrate civic responsibility that balances the personal consequences of students' actions and inactions with the likely effects on the larger community.

Associate of Arts Degree and Associate of Science Degree

The Arts and Sciences curriculum includes a range of course offerings in liberal arts and sciences for all students at the College. Students may enroll in a sequence of courses to earn either the Associate of Arts (AA) degree or the Associate of Science (AS) degree.

Study in the arts and sciences is the classic approach for preparing oneself for life and its many challenges with a broad education founded in history, literature, social sciences, and natural and physical sciences.

For those students who wish to continue their studies toward the completion of a four-year degree after leaving Cuyahoga Community College, it will be necessary to plan a program that provides for eventual transfer of credits to a baccalaureate degree-granting college or university. A large number of Tri-C students plan programs that will transfer to four-year colleges and universities by enrolling in what is usually referred to as the Transfer, or University Parallel curriculum. This course work is the equivalent of the courses offered during the first two years at a four-year institution. Information about planning a program to transfer to a university is provided in the *General Curriculum Information* section.

Associate of Arts Degree

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Arts degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

The Associate of Arts degree prepares students to continue their education at the bachelor's degree level. When selecting courses for this degree, students should select courses according to the requirements of their intended transfer destination school and major; undecided students may use the state-approved Transfer Module as a general guide for transferability.

The following degree requirements are intended to help ensure that students with an Associate of Arts degree have completed the first two years of a baccalaureate degree.

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800 level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000 level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000 level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

General Education Requirements

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College's general education outcomes.

Communication (9 semester credits):

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 or ENG-101H College Composition I *
- ENG-1020 or ENG-102H College Composition II
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, ENG-1000, and English as a Second Language courses):

American Sign Language
English
Foreign Languages
Speech Communication

* Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 9 hours in Communication must be earned.

Mathematics and Data Analysis (3 semester credits):

The ability to integrate numerical, symbolical, and spatial methods for scientific inquiry into the physical, natural, or social and behavioral sciences is essential. Students must complete the following to meet this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher

Natural and Physical Sciences (6 semester credits):

The ability to undertake scientific inquiry in the physical and biological sciences is essential for students seeking an Associate of Arts degree. Students must complete the following to meet this requirement:

- Six (6) semester credits selected from the following course(s) and subject areas (excluding developmental courses):
ANTH-1210
Biology
Chemistry
Earth Science
Physical Science
Physics
- Must include one (1) laboratory experience.

Degree and Certificate Program Requirements

Social and Behavioral Sciences (9 semester credits)

The opportunity to obtain a broader knowledge of the Social and Behavioral Sciences in order to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives is an important part of a liberal arts education. Students must complete the following to meet this requirement:

- Nine (9) semester credits selected from the following subject areas/courses (excluding developmental courses):

Anthropology*	JMC-2220
Economics	JMC-2410
Education	JMC-2480
Geography	JMC-2830
JMC-1011	Political Science
JMC-1410	Psychology
JMC-1610	Sociology
JMC-2000	Urban Studies
JMC-2010	WST-2010
JMC-2020	WST-2120
JMC-2030	WST-2850

*ANTH-1210 cannot be used to meet the Social & Behavioral Sciences Requirement.

Arts and Humanities (9 semester credits)

The appreciation of the achievements of the Arts and Humanities provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; and to integrate ethical decision making in dealing responsibly with personal, family, and community issues. Students must complete the following to meet this requirement:

- Three (3) semester credits selected from the following subject areas/courses:

American Sign Language	MUS-1050
ART-1010	MUS-2500
ART-1040	MUS-2520
ART-2020	MUS-2530
ART-2030	MUS-2540
DANC-1100	MUS-2550
English 2000 level literature courses	Philosophy
Foreign Languages	Religious Studies
History	Speech Communication
Humanities	THEA-1010
JMC-1310	THEA-1100
JMC-2040	THEA-2210
JMC-2310	THEA-2220
MUS-1010	WST-1510
MUS-1020	WST-1520
MUS-1030	WST-200H
MUS-1040	WST-2020
	WST-2030

- Six (6) semester credits selected from the following Arts and Humanities subject areas/courses (excluding developmental courses):

American Sign Language	Music
Art	Philosophy
Dance	Religious Studies
English 2000 level literature courses	Speech Communication
Foreign Languages	Theatre Arts
History	WST-1510
Humanities	WST-1520
JMC-1310	WST-200H
JMC-2040	WST-2020
JMC-2310	WST-2030

- Courses that have been used to complete the Communication requirement cannot count toward fulfilling the Arts and Humanities requirement.

Elective Graduation Requirements

The remaining semester credit hours needed to complete the required minimum total of sixty (60) semester credits may be chosen from 1000-level courses and above, exclusive of developmental coursework and physical education. Courses taken for General Education Requirements cannot count toward fulfilling Elective Graduation Requirements. Students wishing to maximize the use of credits toward a bachelor's degree should select electives according to the requirements of their intended transfer destination school or major. The State-approved Transfer Module provides a general guide for transferability.

Cross-listed courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement. (See Appendix V for listing of Cross-listed courses.)

Associate of Science Degree

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Science degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

The Associate of Science degree prepares students to continue their education at the bachelor's degree level. When selecting courses for this degree, students should select courses according to the requirements of their intended transfer destination school and major; undecided students may use the state-approved Transfer Module as a general guide for transferability.

The following degree requirements are intended to help ensure that students with an Associate of Science degree have completed the first two years of a baccalaureate degree.

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800 level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000 level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000 level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

General Education Requirements

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College's general education outcomes.

Communication (9 semester credits):

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 or ENG-101H College Composition I *
- ENG-1020 or ENG-102H College Composition II
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, ENG-1000, and English as a Second Language courses):

American Sign Language
English
Foreign Languages
Speech Communication

* Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 9 hours in Communication must be earned.

Mathematics and Data Analysis (6 semester credits):

The ability to integrate numerical, symbolical, and spatial methods for scientific inquiry into the physical, natural, or social and behavioral sciences is essential. Students must complete the following to meet this requirement:

- Six (6) semester credits at the MATH-1400 level or higher.

Natural and Physical Sciences (16 semester credits):

The ability to undertake scientific inquiry in the physical and biological sciences is essential for students seeking an Associate of Science degree. Students must complete the following to meet this requirement:

- Sixteen (16) semester credits selected from the following course(s) & subject areas: ANTH-1210, Biology, Chemistry, Earth Science, Physical Sciences, and Physics.
- Must include two (2) laboratory experiences.

Degree and Certificate Program Requirements

Social and Behavioral Sciences (6 semester credits):

The opportunity to obtain a broader knowledge of the Social and Behavioral Sciences in order to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives is an important part of a liberal arts education. Students must complete the following to meet this requirement:

- Six (6) semester credits selected from the following subject areas/courses (excluding developmental courses):

Anthropology*	JMC-2410
Economics	JMC-2480
Education	JMC-2830
Geography	Political Science
JMC-1011	Psychology
JMC-1410	Sociology
JMC-1610	Urban Studies
JMC-2000	WST-2010
JMC-2010	WST-2120
JMC-2220	WST-2850

*ANTH-1210 cannot be used towards the Social and Behavioral Sciences Requirement.

Arts and Humanities (6 semester credits):

The appreciation of the achievements of the Arts and Humanities provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; and to integrate ethical decision making in dealing responsibly with personal, family, and community issues. Students must complete the following to meet this requirement:

- Three semester credits selected from the following subject areas/courses:

American Sign Language	MUS-1050
ART-1010	MUS-2030
ART-1040	MUS-2500
ART-2020	MUS-2510
ART-2030	MUS-2520
DANC-1100	MUS-2530
English 2000 level literature courses	MUS-2540
Foreign Languages	MUS-2550
History	Philosophy
Humanities	Religious Studies
JMC-1310	Speech Communication
JMC-2040	THEA-1010
JMC-2310	THEA-1100
MUS-1010	THEA-2210
MUS-1020	THEA-2220
MUS-1030	WST-1510
MUS-1040	WST-1520
	WST-200H
	WST-2020
	WST-2030

- Three (3) semester credits selected from the following subject areas/courses:

American Sign Language	JMC-2470
Art	Music
Dance	Philosophy
English 2000 level literature courses	Religious Studies
Foreign Languages	Speech Communication
History	Theatre Arts
Humanities	WST-1510
JMC-1310	WST-1520
JMC-2040	WST-200H
JMC-2310	WST-2020
	WST-2030

- Courses that have been used to complete the Communication requirement cannot count toward fulfilling the Arts and Humanities requirement.

Elective Graduation Requirements

The remaining semester credits needed to complete the required minimum total of sixty (60) semester credits may be chosen from 1000-level courses and above, exclusive of developmental coursework. Courses taken for general education requirements cannot count toward fulfilling elective graduation requirements. Students wishing to maximize the use of credits toward a bachelor's degree should select electives according to the requirements of their intended transfer destination school or major. The state-approved Transfer Module provides a general guide for transferability.

Cross-listed courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement. (See Appendix V for listing of Cross-listed courses.)

Associate of Applied Business Degree and Associate of Applied Science Degree

The Associate of Applied Business (AAB) degree and Associate of Applied Science (AAS) degree feature programs in the general areas of business technologies, health careers, engineering and industrial technologies, public service technologies, agriculture and natural resources technologies, and applied industrial technologies.

Tri-C offers more than 80 technical degree programs, many of which have career ladder plans consisting of Awards, Short-Term Certificates and Certificates of Proficiency developed to meet short-term objectives while pursuing associate degree goals. In addition, students in the Associate of Applied Business and Associate of Applied Science degree programs are expected to demonstrate proficiency in their career fields via capstone coursework.

Associate of Applied Business Degree

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Applied Business degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

The Associate of Applied Business degree prepares students with the skills necessary to enter and compete effectively in today's workforce.

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800 level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000 level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000 level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the

general education and program graduation requirements unless otherwise noted.

General Education Requirements

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College's general education outcomes.

All Associate of Applied Business degrees have been designed to meet the general education requirements as listed below. Most programs have selected specific courses to meet the general education requirements. For program specific requirements and/or recommendations, see the *Associate of Applied Degree Program Sequences* in this Catalog (pp. 74-238).

Communication (6 semester credits):

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 or ENG-101H College Composition I *
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, ENG-1000, and English as a Second Language courses):

American Sign Language
English
Foreign Languages
Speech Communication

* Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication must be earned.

Mathematics and Data Analysis (3 semester credits):

The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher.

Degree and Certificate Program Requirements

Arts and Humanities/Social and Behavioral Sciences/ Natural and Physical Sciences (6 semester credits):

The appreciation of the achievements of the Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; to integrate ethical decision making in dealing responsibly with personal, family, and community issues; and to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives. To meet this requirement, students must complete the following:

- Select six (6) semester credits from at least two of the following areas, with a minimum of 3 credits in each area:

Natural and Physical Sciences

ANTH-1210
Biology
Chemistry
Earth Science
Physical Science
Physics

The following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Business degree: DIET-1200, MT-1242, MT-1272, and MT-1280.

Social and Behavioral Sciences

Anthropology	JMC-2410
Economics	JMC-2420
Education	JMC-2830
Geography	Political Science
JMC-1011	Psychology
JMC-1410	Sociology
JMC-1610	Urban Studies
JMC-2000	WST-2010
JMC-2010	WST-2120
JMC-2220	WST-2850

Arts and Humanities

American Sign Language	JMC-2310
ART-1010	Literature courses
ART-1040	MUS-1010
ART-2020	MUS-1020
ART-2030	MUS-1030
DANC-1100	MUS-1040
English 2000 level	MUS-1050
Foreign Languages	MUS-2030
History	MUS-2500
Humanities	MUS-2510
JMC-1310	MUS-2520
JMC-2040	MUS-2530

MUS-2540	THEA-2210
MUS-2550	THEA-2220
Philosophy	WST-1510
Religious Studies	WST-1520
Speech Communication	WST-200H
THEA-1010	WST-2020
THEA-1100	WST-2030

- Courses that have been used to complete the Communication requirement cannot count toward fulfilling Arts and Humanities requirement.

Program Requirements

Program requirements are outlined by the specific technical program sequences in this College Catalog. Approximately one-half of each Associate of Applied Business program requirements must include a minimum of 15 additional credits of general education or applied general education (i.e. "basic" coursework), for a total of 30 credits of non-technical coursework. Applied general education includes a focus on "21st century" skills and knowledge, including: information and communication literacy, critical thinking and problem solving, interpersonal and collaborative skills, global awareness, and financial, economic, business and civic literacy. Technical program concentrations should consist of twelve (12) to sixteen (16) semester credits of technical specialization including a minimum one-semester credit Capstone Course.

The Capstone Course provides students with opportunities to apply technical, oral, and written skills; to prepare resumes and/or portfolios and develop interview skills; to study history and trends in the profession; and/or to discuss ethical and global issues within the profession. The program requirements are identified in the *Associate of Applied Degree Program Sequences* in this Catalog.

Cross-listed courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement. (See Appendix V for listing of Cross-listed courses.)

Associate of Applied Science Degree

Degree candidates at Cuyahoga Community College must be in good standing. An Associate of Applied Science degree will be granted to the student completing the following requirements:

Comprehensive Graduation Requirements

1. The satisfactory completion of 60 semester credit hours (exclusive of physical education) at the 1000-level or higher.
2. The achievement of a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
3. The completion of a minimum of 12 credits of advanced coursework (exclusive of physical education and 1800 level special topics and independent study/research courses) of the 60 semester credits. Advanced coursework is defined as follows: 2000 level courses, MATH-1400 level and above, BIO-1500 level and above, CHEM-1300 level and above, and PHYS-1200 level and above.
4. The completion of no fewer than 20 of the required 60 semester hours (exclusive of physical education) at the 1000 level or higher while in attendance at Cuyahoga Community College.
5. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and program graduation requirements unless otherwise noted.

General Education Requirements

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program requirements for a degree will have achieved the College's general education outcomes.

All Associate of Applied Science degrees have been designed to meet the general education requirements as listed below. Most programs have selected specific courses to meet the general education requirements. For program specific requirements and/or recommendations, see the *Associate of Applied Degree Program Sequences* in this Catalog (pp. 74-238).

Communication (6 semester credits): The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 or ENG-101H College Composition I *
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, ENG-1000, and English as a Second Language courses):
 - American Sign Language
 - English
 - Foreign Languages
 - Speech Communication

* Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication must be earned.

Mathematics and Data Analysis (3 semester credits)

The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher.

Arts and Humanities/Social and Behavioral Sciences/ Natural and Physical Sciences (6 semester credits)

The appreciation of the achievements of the Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; to integrate ethical decision making in dealing responsibly with personal, family, and community issues; and to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives. To meet this requirement, students must complete the following:

- Select six (6) semester credits from at least two of the following areas, with a minimum of 3 credits in each area:

Natural and Physical Sciences

ANTH-1210
Biology
Chemistry
Earth Science
Physical Science
Physics

Degree and Certificate Program Requirements

The following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Science degree: DIET-1200, MT-1242, MT-1272, and MT-1280.

Social and Behavioral Sciences

Anthropology	JMC-2410
Economics	JMC-2420
Education	JMC-2830
Geography	Political Science
JMC-1011	Psychology
JMC-1410	Sociology
JMC-1610	Urban Studies
JMC-2000	WST-2010
JMC-2010	WST-2120
JMC-2220	WST-2850

Arts and Humanities

American Sign Language	MUS-2510
ART-1010	MUS-2520
ART-1040	MUS-2530
ART-2020	MUS-2540
ART-2030	MUS-2550
DANC-1100	Philosophy
English 2000 level	Religious Studies
literature courses	Speech Communication
Foreign Languages	THEA-1010
History	THEA-1100
Humanities	THEA-2210
JMC-1310	THEA-2220
JMC-2040	WST-1510
JMC-2310	WST-1520
MUS-1010	WST-200H
MUS-1020	WST-2030
MUS-1030	
MUS-1040	
MUS-1050	
MUS-2030	
MUS-2500	

- Courses that have been used to complete the Communication requirement cannot count toward fulfilling Arts and Humanities requirement.

Program Requirements

Program requirements are outlined by the specific technical program sequences in this College Catalog. Approximately one-half of each Associate of Applied Science program requirements must include a minimum of 15 additional credits of general education or applied general education (i.e. "basic" coursework), for a total of 30 credits of non-technical coursework. Applied general education includes a focus on "21st century" skills and knowledge, including: information and communication literacy, critical thinking

and problem solving, interpersonal and collaborative skills, global awareness, and financial, economic, business and civic literacy. Technical program concentrations should consist of twelve (12) to sixteen (16) semester credits of technical specialization including a minimum one-semester credit Capstone Course.

The Capstone Course provides students with opportunities to apply technical, oral, and written skills; to prepare resumes and/or portfolios and develop interview skills; to study history and trends in the profession; and/or to discuss ethical and global issues within the profession. The program requirements are identified in the *Associate of Applied Degree Program Sequences* in this Catalog.

Cross-listed courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement. (See Appendix V for listing of Cross-listed courses.)

Associate of Technical Study Degree

The Associate of Technical Study (ATS) degree allows students to combine courses from two or more different technical programs to create a degree that focuses on a special career interest. Another ATS option is for students who have successfully completed a course of technical studies in a non-credit bearing post-secondary institution that has an articulation agreement with the College. Based upon the articulation agreement, the student may receive up to 30 transfer credits toward an Associate of Technical Study degree in the specific program identified in the agreements.

Associate of Technical Study Degree

Cuyahoga Community College will grant an Associate of Technical Study degree to students in good standing upon completion of the following requirements:

Comprehensive Graduation Requirements

The Associate of Technical Study degree prepares students with the skills necessary to enter and compete effectively in today's workforce. It is awarded for the successful completion of an individually planned technical education program which contains an area of concentration formed either by an intra-institutional combination of courses from two or more different technical programs or by credit (maximum of 30 semester credit hours) awarded by the College for courses completed or training received at other institutions with which the College has entered into an articulation agreement.

1. Students must complete an application for admission to the ATS Program which includes an outline of specific coursework to be taken to earn the ATS degree.
2. Students must satisfactorily complete at least 60 semester credits (exclusive of physical education) at the 1000-level or higher.
3. Students must achieve a minimum overall grade point average of 2.00 for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
4. Students must complete a minimum of 20 of the 60 semester credits at Cuyahoga Community College after the ATS application has been approved.
5. Special Topics, Independent Study/Research and Cooperative Education courses may be applied to the general education and program requirements unless otherwise noted.

General Education Requirements

Each of the College's degree programs require that students complete a set amount of courses in the areas of general education which include: Communication, Mathematics and Data Analysis, Natural and Physical Sciences, Arts and

Humanities, and Social and Behavioral Sciences. Students completing the general education requirements, along with the specific program and elective requirements for a degree will have achieved the College's general education outcomes.

Communication (6 semester credits)

The communication skills of reading analytically, writing fluently, listening critically, and speaking articulately are essential. Students must complete the following to meet this requirement:

- ENG-1010 or ENG-101H College Composition I *
- Three (3) semester credits selected from the following subject areas (exclusive of developmental education, ENG-1000, and English as a Second Language courses):

American Sign Language
English
Foreign Languages
Speech Communication

* Students who transfer in credits for ENG-1020 without having credit for ENG-1010 will have ENG-1010 waived, but the required 6 hours in Communication must be earned

Mathematics and Data Analysis (3 semester credits)

The ability to integrate numerical methods for use in today's workforce is essential. Students must complete the following to complete this requirement:

- Three (3) semester credits of Mathematics at the 1000-level or higher.

Arts and Humanities/Social and Behavioral Sciences/ Natural and Physical Sciences (6 semester credits)

The appreciation of the achievements of the Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences provides the ability to integrate learning within a complex global perspective; to gain an awareness of and respect for different cultures; to integrate ethical decision making in dealing responsibly with personal, family, and community issues; and to understand, analyze, and describe aspects of human behavior from diverse political, social, historical, and cultural perspectives. To meet this requirement, students must complete the following:

- Select six (6) semester credits from at least two of the following areas, with a minimum of 3 credits in each area:

Natural and Physical Sciences

ANTH-1210
Biology
Chemistry
Earth Science
Physical Science
Physics

Degree and Certificate Program Requirements

The following courses from non-science subject areas can be counted toward this requirement for the Associate of Technical Studies degree: DIET-1200, MT-1242, MT-1272, and MT-1280.

Social and Behavioral Sciences

Anthropology	JMC-2220
Economics	JMC-2410
Education	JMC-2420
Geography	JMC-2830
JMC-1011	Political Science
JMC-1410	Psychology
JMC-1610	Sociology
JMC-2000	Urban Studies
JMC-2010	WST-2010
	WST-2120
	WST-2850

Arts and Humanities

American Sign Language	MUS-2030
ART-1010	MUS-2500
ART-1040	MUS-2510
ART-2020	MUS-2520
ART-2030	MUS-2530
DANC-1100	MUS-2540
English 2000 level literature courses	MUS-2550
Foreign Languages	Philosophy
History	Religious Studies
Humanities	Speech Communication
JMC-1310	THEA-1010
JMC-2040	THEA-1100
JMC-2310	THEA-2210
MUS-1010	THEA-2220
MUS-1020	WST-1510
MUS-1030	WST-1520
MUS-1040	WST-200H
MUS-1050	WST-2030

- Courses that have been used to complete the Communication requirement cannot count toward fulfilling Arts and Humanities requirement.

Elective Graduation Requirements (15 semester credits)

The remaining fifteen (15) semester credits to complete the required minimum total of sixty (60) semester credits may be chosen from 1000-level courses and above, exclusive of developmental coursework and physical education.

Courses taken to meet general education requirements in Communication, Mathematics and Data Analysis, Arts and Humanities, Social and Behavioral Sciences, or Natural and Physical Sciences cannot count towards fulfilling elective graduation requirements. Selection of elective semester credit hours of coursework shall be related to the occupational objective of the student of the basic components to further develop technical competencies.

Program Requirements

The program leading to an Associate of Technical Study degree must have an area of concentration which is equivalent to thirty (30) semester credits in technical studies and clearly identifiable with a career objective. Approximately one-half of each Associate of Technical Study program is devoted to non-technical studies.

Cross-listed Courses

Cross-listed courses are identical courses offered in two or more subject areas. They differ only in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement. (See Appendix V for listing of Cross-listed courses.)

Certificate Programs

Cuyahoga Community College grants Short-Term Certificates, Certificates of Proficiency, Degrees and Post-Degree Professional Certificates. These curriculum options allow for multiple entry and exit points and supports career laddering.

A student can start in a degree program by taking those courses identified in the Short-Term Certificate, which may be a subset of that degree. They are then ready to enter the job market with these new skills while continuing to pursue their next goal which could be a Certificate of Proficiency.

Once an associate degree is obtained, or if a student already has a bachelor's degree, a Post-Degree Professional Certificate can be pursued.

Students petitioning for a certificate must petition to the Enrollment Center no later than 30 days before the end of the term in which they will complete the certificate requirements.

Short-Term Certificate

A Short-Term Certificate prepares students for entry-level positions in a specific career/employment situation.

Short-Term Certificate candidates at Cuyahoga Community College must be in good standing. A Short-Term Certificate will be granted to the student completing the following requirements:

1. The satisfactory completion of 9-29 semester credits at the 1000 level or higher as defined in the Short-Term Certificate.
2. The completion of no fewer than nine (9) credits while in attendance at Cuyahoga Community College.
3. The accumulation of a minimum grade point average of "C" or better (2.00) for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
4. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

One-Year Certificate of Proficiency

A Certificate of Proficiency program prepares the students for proficiency in an occupation field, after they successfully complete a prescribed education program.

Certificate candidates at Cuyahoga Community College must be in good standing. A Certificate of Proficiency will be granted to the student completing the following requirements:

1. The satisfactory completion of 30-37 semester credits at the 1000 level or higher as defined in the Certificate of Proficiency.
2. The completion of no fewer than nine (9) semester credits while in attendance at Cuyahoga Community College.
3. The accumulation of a minimum grade point average of "C" or better (2.00) for all courses attempted at Cuyahoga Community College (with exceptions as provided under College policies for repeating a course, Grade Forgiveness and Fresh Start).
4. Special Topics, Independent Study/Research, and Cooperative Education courses may be applied to the general education and elective graduation requirements unless otherwise noted.

Post-Degree Professional Certificate

The Post-Degree Professional Certificate is a high-quality program of instruction for those students who have already completed an academic degree and are pursuing additional certification in professional and technical fields.

Post-Degree Professional Certificate candidates at Cuyahoga Community College must be in good standing. A Post-Degree Professional Certificate will be granted to the student who has fulfilled the following requirements:

1. Completed an associate degree or higher from a regionally accredited post-secondary institution, or an equivalent degree or diploma from a post-secondary program certified and accredited by a state or nationally certified and accredited board.
2. The satisfactory completion of 20-37 semester credits as identified in the specific Post-Degree Professional Certificate.
3. The completion of no fewer than nine (9) semester credits defined in the Post-Degree Professional Certificate while in attendance at Cuyahoga Community College.
4. The accumulation of a minimum grade point average of 2.50.

Degree and Certificate Programs No Longer Offered by the College

The College may award a deleted degree or certificate program for up to two (2) years after its deletion. After that time limit, the student will no longer be able to petition for the deleted degree program.

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General Curriculum Information

Catalog-in-Force

Each student's Catalog-in-Force or degree or certificate requirements is the College Catalog which is in effect when a student first enrolls in credit courses at Cuyahoga Community College. Students have seven (7) years in which to complete their degree or certificate program requirements. If the student has not completed the degree in a 7-year period, the student must satisfy requirements of a Catalog-in-Force within the most recent 7 years. Two exceptions to this exist:

1. For programs that have selective admission, a student's Catalog-in-Force requirements (degree or certificate program requirements) are those that are in effect the term a student is accepted into the program and enrolls in program courses.
2. A student who has been away from the College for six consecutive semesters (including summers) will follow the Catalog-in-Force (degree or certificate program requirements) effective the term the student re-enrolls in credit courses.

In addition, the College reserves the right to change course offerings and academic requirements as deemed necessary.

Requests for exception or questions about Catalog-in-Force should be submitted to the Director of the Enrollment Center upon the recommendation of a counselor.

Choosing a Technical Career Field

Students who want to prepare for specific technical roles in various fields should consider the several program concentrations offered in the general fields of business, engineering, health, public service, and agriculture and natural resources, and apprenticeships.

Study in these programs lead to either the Associate of Applied Business or Associate of Applied Science degree; one of the customized degrees available is the Associate of Technical Study; or one of the certificates.

Awards of Study

Cuyahoga Community College's Board of Trustees authorizes awards of study to complement the College's certificate and associate degree programs. For a complete list of awards of study available, contact your campus Counseling Office.

General Application Procedures for Degree and Certificate Programs

Many programs require proficiency requirements to be met before acceptance into the program. This may require taking specific courses or assessment tests before beginning a program, or meeting specific program requirements. Admission to the Nursing program and other health career programs is limited to the number of openings in each program. Students who apply and meet the admission requirements are admitted into the program of choice in the order in which their completed application is received. Program admission requirements are included with each program sequence.

Semester Course Numbering

The course number assigned to a course helps to identify the type of course. Developmental courses begin with the digit zero. Introductory courses and major and technical courses are grouped within a number range. Field experience courses have specific course numbers that help to identify the type of field work involved. This numbering scheme is outlined in Appendix IV.

Course Equivalency

Equivalent courses are two or more courses that have been declared equivalent by content experts in the specific discipline. Semester courses that have been deleted are usually replaced with an equivalent course that contains the same or similar content and thus is deemed as equivalent to the deleted course. Two current courses may be declared as equivalent, such as a standard course and an honors course that cover the same material, though the honors course exceeds the requirements and outcomes of the standard course; cross-listed courses that are identical in course content but are listed in different subject areas; or a standard course and its modular courses. When an equivalency exists, the equivalent courses may be treated as repeats: credit is earned for only one completion and the lower of the two grades is not computed into the student's grade point average. For more information and a listing of equivalent courses, see Appendix V.

Prerequisites

Courses which are required as prerequisites must be completed with a grade of "C" or higher in order to be eligible to enroll in the listed course. In addition, many courses require "eligibility" for a specific course as a prerequisite, i.e. Eligibility for ENG-1010 College Composition I. Eligibility for a specific course may be demonstrated by any of the following:

- Completion of Tri-C's assessment with a score appropriate for placement into the specific course listed; OR
- Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university); OR
- Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

Prerequisites are checked by the computer at the time of registration. Prerequisite checking does not recognize courses that were taken under quarters at Tri-C. See a counselor if you took the prerequisite coursework under quarters before trying to register.

Transferring Credits - Transfer Module & Transfer Assurance Guides (TAGs)

The Baccalaureate Degree

General Education and pre-major courses offered by Cuyahoga Community College for transfer purposes are designed to parallel those courses that comprise the first two years of study leading to the baccalaureate degree at a four-year college or university.

It is the responsibility of the student to become acquainted with and follow the requirements for the selected method of transferring courses. Counselors are available to assist in this planning process.

Transfer students take general education courses during their freshman and sophomore years at Cuyahoga Community College. After transferring, students will specialize in a major at the receiving institution during their junior and senior years. Courses listed in the Transfer Module at Cuyahoga Community College may be found in Appendix I.

Ohio's Transfer Policy

The State of Ohio through the leadership of the Ohio Board of Regents has established a coherent statewide policy intended to facilitate a student's ability to complete their highest level of educational goal achievement seamlessly within Ohio's post-secondary educational system. To that end, the Ohio Articulation and Transfer policy <http://regents.ohio.gov/transfer/policy/index.php> was developed to facilitate the transfer of students and credits

from any state-assisted college or university to another. It encourages faculty recognition of comparable and compatible learning experiences and expectations across institutions. It also encourages students to complete "units" of educational experience as they progress (e.g. transfer assurance guides, transfer modules, associate and baccalaureate degrees).

Transfer Module

The Transfer Module represents a subset of courses from among the general education requirements of the Associate of Arts (AA), Associate of Science (AS) and baccalaureate degrees at many institutions. Applied degree students may choose to go beyond the general education requirements of their program and complete additional courses for the transfer module. Transfer students with an earned AA or AS degree which contains an identifiable Transfer Module will have met the Transfer Module requirements of the receiving institution. The application of transfer work to general education requirements which go beyond those contained in the Transfer Module will be done on a course-by-course basis. Individual courses that are part of an approved Transfer Module are guaranteed to transfer among public institutions of higher education on a course-by-course basis. Students will receive credit for successfully completed courses from the Transfer Module without completing the entire module.

Transfer Assurance Guides (TAGs)

Ohio Transfer Assurance Guides (TAGs) are composed of General Education courses (Transfer Module courses) and specified courses required for the academic major. A TAG as an advising tool can assist Ohio college and college bound students planning specific majors to make course selections that will ensure comparable, compatible, and equivalent learning experiences across the state's higher-education system. TAGs apply across all public higher education institutions in Ohio and embody commonly accepted pathways to majors within the bachelor's degree. TAG approved courses are assigned an Ohio Articulation Number (OANs) and are accepted and applied to the major at all Ohio public colleges and universities. Specific TAG pathways in the arts, humanities, business, communication, education, health, mathematics, science, engineering, engineering technologies, and the social sciences have been developed by faculty teams. Additional information on specific Transfer Assurance Guides can be found on the Ohio Board of Regents Web site: <https://www.ohiohighered.org/transfer/tag> TAGs enable students to make informed course selection decisions and plans for their future transfer. Advisors at the institution to which a student wishes to transfer should also be consulted during the transfer process. Because of specific major requirements, early identification of the intended major is encouraged.

Ohio Articulation Number (OAN)

Pre-major courses that represent the commonly accepted pathway to majors within the bachelor's degree (TAGs) have been reviewed by statewide faculty committees. Courses or course sequences meeting established learning outcome standards are assigned a discipline specific Ohio Articulation Numbers (OANs). When consensus is established and a course is noted with both the colleges or universities departmental designation and the assigned Ohio Articulation Number (OAN), students are assured not only of the equivalency of the courses, but of their application to the degree objective. A complete listing of Cuyahoga Community Colleges OAN approved courses can be found at

<https://www.ohiohighered.org/transfer/tag>

Conditions for Transfer Admission

Students meeting the requirements of the Transfer Module and Associate of Arts or Associate of Science degree completion have the following guarantees:

1. The policy guarantees admission to students who complete a transfer module and either the Associate of Arts or the Associate of Science degree. These students will be able to transfer all courses in which they received a passing grade of "D" or better. Students must have an overall grade point average of 2.00 to be admitted.
2. The policy also encourages receiving institutions to give preferential consideration for admission to students who complete a transfer module with a grade point average of 2.00 and 60 semester credits. Students must have an overall grade point average of 2.00 to be given credit for transfer module courses.
3. The policy encourages receiving institutions to admit on a non-preferential consideration basis students who complete a transfer module with a grade point average of 2.00 and less than 60 semester credits. Students must have an overall grade point average of 2.00 to be given credit for transfer module courses.

Admission to a given institution, however, does not guarantee that a transfer student will automatically be admitted to all majors, minors or fields of concentration at that institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as all other students. Furthermore, transfer students shall be accorded the same class standing and other privileges as all other students on the basis of the number of credits earned. All residency requirements must be successfully completed at the receiving institution prior to the granting of a degree.

Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore years. This will enable students to plan and pursue a course of study that will articulate with an academic major at the receiving institution.

Students are encouraged to seek further information regarding transfer from both a counselor and the college or university to which they plan to transfer.

Appeals Process

A multilevel, broad-based appeal process is required to be in place at each institution. A student disagreeing with the application of transfer credit by the receiving institution shall be informed of the right to appeal the decision and the process for filing the appeal. Cuyahoga Community College makes the appeal process available to students on each campus.

If a transfer student's appeal is denied by the institution after all appeal levels within the institution have been exhausted, the institution shall advise the student in writing of the availability and process of appeal to the state level Articulation and Transfer Appeals Review Committee.

The Appeals Review Committee shall review and recommend to institutions the resolution of individual cases of appeal from transfer students who have exhausted all local appeal mechanisms concerning applicability of transfer credits at receiving institutions.

Planning Your Transfer Program at Tri-C

Students who plan to begin their baccalaureate degree at Tri-C and then transfer to a four-year college or university should meet with a counselor to select one of the following transfer options, plan a program of study and obtain a transfer guide.

Associate Degree Preferred Admission

Transfer students can elect to complete all the requirements of either the Associate of Arts degree or the Associate of Science degree at Cuyahoga Community College.

If the student completes the degree requirements within the parameters of the Transfer Module requirements, 36 to 40 semester credits will transfer automatically, and the remaining credits up to the 60 that make up the associate

degree will be evaluated for transfer on a course-by-course basis. Students who complete a transfer module and the associate degree are guaranteed admission to any Ohio public university.

Course-by-Course Transfer Evaluation

Students who do not choose to complete the Transfer Module or the associate degree requirements have the option to plan a transfer program with a counselor on a course-by-course basis. Under this option, the receiving school will evaluate the transfer acceptability of credit for each course taken. This option requires the student to select a receiving transfer school in advance and select courses with the assistance of counselors at Tri-C and the receiving institution.

Although this option provides no advance assurance of transferability as provided in the Transfer Module or associate degree completion, it does provide the flexibility to select course work tailored to meet specific program admission requirements, if this is important to the student. Successful transfer of courses using this method requires careful planning and course selection with the assistance of a College counselor. This method gives the student the option of taking only those Tri-C courses that will be accepted at the program level at the receiving school, avoiding the problem of taking the same course twice (once at Tri-C to meet general transfer requirements and again at the receiving school to meet a program admission transfer requirement). The following guidelines are the recommended process students should follow to transfer the maximum number of credits using the individual course evaluation method:

1. Identify the institution and the major to which credit will be transferred.
2. Obtain a copy of the current Catalog from the receiving institution.
3. Review the program admission requirements for the intended major.
4. Schedule a consultation with a Tri-C counselor to review the program requirements and identify their equivalents in the Tri-C curriculum.
5. Consult with a counselor and/or program advisor at the receiving school to resolve any questions about transferability at either the general admission or the program level.
6. Complete all the specific courses and sequences that the Tri-C counselor designates as meeting the program requirements for the school where credits will be transferred.

7. After completing college course work at Cuyahoga Community College, complete a request for a transcript of grades in the Enrollment Center and have it sent to the admissions office at the college or university where you will transfer your credits. Consult with the admissions office about other details necessary to complete this step.

Two-Plus-Two Transfer Option

In general, courses in the Associate of Arts and Associate of Science degrees are designed to parallel the freshman and sophomore level courses at four-year colleges and universities. An option in some Tri-C career/technical programs in the Associate of Applied Business and the Associate of Applied Science curriculum enables students to earn an associate degree in these programs at Tri-C and then transfer to a four-year institution to work toward a baccalaureate degree in the designated technical field.

Credits earned at Tri-C in the two-plus-two option are transferable toward a four-year degree only at cooperating four-year colleges and universities. Students should consult with a Tri-C counselor if interested in the two-plus-two career/technical transfer option.

Transfer Course Selection

Counselors will help students plan individual transfer programs using the above options. Students who are undecided about a major will be assisted in planning a transfer program that meets general admission requirements at the receiving school.

Cuyahoga Community College offers preparatory or refresher courses in English composition, reading comprehension, mathematics and speech communication for students who need to upgrade these basic skills. These courses are not designed for transfer but are intended to provide students the opportunity to improve their skills. To avoid taking a course that does not transfer, it is the student's responsibility to select courses with the assistance of a Tri-C counselor.

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General Application Procedures

Business and Technology Programs

Certain programs at Cuyahoga Community College require students to meet proficiency requirements in order to progress to the next level of course work within the student's major area of study. In addition to the proficiency requirements, some may also require students to complete an application for that program.

Students are responsible for meeting the admission and/or proficiency requirements for a listed program major.

Prior to taking any coursework, students should follow the regular procedures for admission to Cuyahoga Community College. These procedures can be found in the front part of the catalog under Admissions.

In addition to the admission procedures, all students must do the following:

1. If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses indicated on the program sequence page(s) are the minimum levels for eligibility.
2. If indicated on the program sequence page(s), submit a completed application form to the program to which you wish to apply. Application forms may be obtained from the departmental office.
3. Complete all other requirements for your program as specified on the program sequence page(s). Additional details about the program can be obtained from the program coordinator/manager or by appointment with a Tri-C counselor.

If an application is required for your program, the application does not necessarily guarantee admission to that program.

DEFINITION OF ELIGIBILITY: Eligibility for a specific course may be demonstrated by any of the following:

- a. Completion of Tri-C's assessment with a score appropriate for placement into the specific course listed; OR
- b. Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university); OR
- c. Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

QUARTER COURSES: Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree programs.

General Application Procedures

Health Careers

Courses in health career programs are offered in a sequence which begins in the Fall Semester (unless indicated otherwise in the application procedures listed on the program sequence pages).

Admission each year is limited to the number of openings in each program. Those students applying and meeting all of the specific admission requirements will be admitted in the order in which completed applications are received.

Those who wish to apply for any of these programs must complete the following general procedures; see the program sequence page(s) for additional application requirements.

1. Submit a completed Application for Admission to Cuyahoga Community College, unless you have previously applied. Prior Tri-C students who have not been enrolled for three years or longer must submit an application for Admission/Readmission to Tri-C. See page 20 for information on Applying to Tri-C.
2. Contact the high school from which you graduated or the agency that issued your GED and have them send an official transcript directly to the Office of the Registrar at Tri-C (P.O. Box 5966, Cleveland, OH 44101-0966).
3. Contact all colleges/universities you have attended and have them send an official transcript(s) directly to the Office of the Registrar at Tri-C. To ensure time for processing, the transcript should be received at Tri-C at least **six to eight weeks prior to the time you expect to apply** to the health career program. Applicants who have attended institutions outside the U.S. must contact the Office of the Registrar for special procedures.
4. Complete all required courses and meet the grade point average (GPA) requirement as specified on the program sequence page(s). If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses indicated on the program sequence page(s) are the minimum levels for eligibility. In addition to academic requirements, programs may also require certain kinds of experience or other criteria; refer to the program sequence page(s) for additional information.
5. Submit the program's application form to the Health Careers Enrollment Center (Metropolitan Campus, MHCS 193, Cleveland, OH 44115). Please note that additional documents may be required to accompany your application form (such as additional copies of high school and college/university transcripts, even if already on file in the Office of the Registrar). You will receive directions concerning additional documents when you obtain the program's application form. Call 216-957-4247 to obtain an application.

Any falsification of information provided in the application will automatically disqualify applicant for admission to a program.

Courses used as prerequisites or core courses for the Health Career and Nursing programs **MUST** have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites and core courses will **NOT** be accepted by the Health Career and Nursing programs. Students are responsible for consulting with their program manager or counselor to determine P/NP grading options.

Required Criminal Background check (BCI): All health career programs at Tri-C are considered selective admission programs. These programs have a limited number of openings each year and have specific admission requirements that must be met prior to admission. The completion of a criminal background check (BCI) is one of the admission requirements to a Health Career program. The background checks are required in order to (i) ascertain the ability of students to eventually become licensed, registered and/or certified in their health career profession and (ii) the ability of the students to attend mandatory clinical, practicum and/or internship rotations at internal and external facilities in accordance with the requirements of the applicable program of study. **Please see <http://www.tri-c.edu/programs/healthcareers/Pages/BackgroundCheckInformation.aspx> for important information regarding the BCI requirements and processes.**

Required Immunizations: All students enrolled in Health Career programs may be required to receive or have sufficient proof of certain immunizations. See your program manager for a list of required immunizations for your program.

DEFINITION OF ELIGIBILITY: Eligibility for a specific course may be demonstrated by any of the following:

- a. Completion of Tri-C's assessment with a score appropriate for placement into the specific course listed; OR
- b. Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred from another college or university); OR
- c. Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

QUARTER COURSES: Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree programs.

MATH-1140 does not meet the admission or graduation requirement for health career degree programs. **STUDENTS MUST COMPLETE A MINIMUM OF 3 SEMESTER CREDITS IN MATH-1141 APPLIED ALGEBRA AND MATHEMATICAL REASONING OR HIGHER.**

Program Sequences

ACCOUNTING

Associate of Applied Business degree in Accounting

The associate degree program in Accounting concentrates on providing a foundation in preparation for paraprofessional accounting careers and future advancement into supervisory positions. The program addresses the fundamentals of accounting education: namely, sound technical competence, verbal and written communication skills, and decision-making abilities. Current technology has been integrated to provide students with both the theory and practical skills necessary to meet the demands of today's business environment. Check with the counseling department for 2 + 2 transfer opportunities, university partner programs and continuing education hours for the certified professional.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010
- Eligibility for MATH-1250 or higher

Other Information:

- Non-degree students may enroll for individual courses, providing they meet the course specific prerequisites.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate financial and related information, both verbally and in writing, relative to their skill level with internal and external constituents, both inside and outside the field.
2. Work collaboratively, professionally, ethically, and fiduciary to pursue the corporate objectives in a manner that is within the appropriate professional code of conduct.
3. Perform accurately and apply fundamental accounting process to properly record ordinary business transactions, culminating with draft financial statements.
4. Utilize office suite including spreadsheets, database, word processing, presentation, and enterprise-wide technology to optimally perform the daily accounting tasks.
5. Recognize when inaccuracies or other issues arise, research alternatives, and proactively suggest solutions.

		Suggested Semester Sequence	<u>Credits</u>
<u>First Semester</u>			
ACCT-1310	Financial Accounting		4
BADM-1020	Introduction to Business		3
IT-1010	Introduction to Microcomputer Applications ... OR		3
IT-101H	Honors Introduction to Microcomputer Applications		4
MATH-1250	Contemporary Mathematics or higher ¹		14
<u>Second Semester</u>			
ACCT-1041	Individual Taxation		4
ACCT-1340	Managerial Accounting		4
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		4
ECON-2620	Principles of Microeconomics		15
<u>Third Semester</u>			
ACCT-xxxx	Accounting Elective ... OR		2 - 4
FIN-xxxx	Finance Elective		4
ECON-2610	Principles of Macroeconomics		3
ENG-1020	College Composition II ... OR		3
ENG-102H	Honors College Composition II		3
FIN-2100	Financial Management		3-4
MARK-2010	Principles of Marketing ... OR		-
BADM-1121	Principles of Management and Organizational Behavior		15 - 18
<u>Fourth Semester</u>			
ACCT-2995	Accounting Technology C		3
ACCT-2xxx	Accounting 2000 level elective		3 - 4
BADM-2010	Business Communications		3
BADM-2150	Business Law		4
PHIL-1000	Critical Thinking ... OR		3
PHIL-1020	Introduction to Logic ... OR		-
PHIL-2020	Ethics ... OR		16 - 17
PHIL-2060	Business Ethics		-
		PROGRAM TOTAL	60 - 64
<u>ELECTIVES</u>			
<u>Recommended Electives</u>			<u>Credits</u>
Select from the following courses to fulfill the elective requirement. Please check with counseling for transferability.			
ACCT 1030	Payroll		3
ACCT 2041	Business Taxation		4
ACCT 2050	Volunteer Income Tax Assistance		2
ACCT 2310	Intermediate Accounting I		4
ACCT 2320	Intermediate Accounting II		4
ACCT 2340	Cost Accounting		4
ACCT 2500	Governmental/Non-Profit Accounting		4
ACCT 2510	Auditing		4
ACCT 2520	QuickBooks Immersion		2
ACCT 2830	Cooperative Field Experience		1 - 3
ACCT 28xx	Accounting Special Topics		2 - 4
FIN 1061	Personal Finance		3
FIN-28XX	Finance Special Topics		2-4

¹MATH-1800-1820 may not be used to meet this requirement.

MATH-1270 or higher is recommended for students planning to transfer. C = Capstone course.

PAYROLL

Certificate of Proficiency

The Payroll Certificate prepares students for entry-level employment as payroll clerks. Payroll clerks are responsible for handling payroll issues, tax preparation, and year-end reporting for organizations and companies. The one-year certificate program is designed to accommodate those who are employed full-time or are attending college on a part-time basis, seeking to upgrade their existing employment skills or begin a job in payroll. This program will also help prepare those students who want to pursue certification credentials through the American Payroll Association. Students may apply credits earned in the Payroll Certificate toward an Associate of Applied Business degree in Accounting.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate payroll and related information both verbally and in writing, relative to their knowledge and skill level with internal and external constituents, both inside and outside the field.
2. Work collaboratively, professionally, ethically, and with fiduciary responsibility to process payroll in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental accounting processes to properly record routine and nonroutine payroll transactions.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record and process payroll transactions.
5. Be prepared to sit for the Fundamental Payroll certification examination presented by the American Payroll Association.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Intro to Microcomputer Applications ... OR	3
IT-101H	Honors Intro to Microcomputer Applications	16

<u>Second Semester</u>		<u>Credits</u>
ACCT-1030	Payroll	3
ACCT-1041	Individual Taxation	4
ACCT-2520	QuickBooks Immersion	2
ACCT-xxxx	Accounting Elective ... OR	2 - 4
BADM-2150	Business Law	
BADM-2330	Human Resource Management	3
		14 - 16
	PROGRAM TOTAL	30 - 32

ELECTIVES

ACCT-1340	Managerial Accounting	4
ACCT-2041	Business Taxation	4
ACCT-2830	Co-op Experience	2 - 3

ADMINISTRATIVE OFFICE SYSTEMS

Associate of Applied Business Degree in Administrative Office Systems

Students will be prepared for careers in a variety of office settings utilizing the professional applications of word processing, spreadsheets, databases, electronic presentations, and desktop publishing. Students will gain the necessary skills to produce documents, reports, and correspondence while maintaining files electronically by integrating various software applications/functions. Skills acquired will assist students in preparing to take industry certification exams.

Program Admissions Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010
- Eligibility for 1000-level Math course

Other Information

- Certificate available in Basic Office Skills, Office Operations Management, and Virtual Office Assistant.
- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.
- Skills acquired prepare students to take industry certification exams.
- Keyboarding may be waived for students who can demonstrate 25 wpm typing speed by touch (using correct fingering and not looking at the keys) on proficiency exam administered by AOS department. Waiver form must be signed by AOS department.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.
4. Determine and use various office applications software to develop, document, and manage office project, procedures and systems.
5. Organize time and resources to manage day-to-day operations that meet organization guidelines and goals.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BADM-1000	Business Language Skills	2
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
IT-1000	Keyboarding ¹	2
		15

(continued on next page)

Program Sequences

ADMINISTRATIVE OFFICE SYSTEMS (Continued)

<u>Second Semester</u>		<u>Credits</u>
AOS-1201	Word Processing I	4
AOS-1220	Speed Building (a) ... OR	2
BADM-1121	Principles of Management and Organizational Behavior (b) ... OR	4
MA-1020	Medical Terminology I (c) ... OR	3
PL-1501	Law Office Technology (d) ... OR	2
BADM-1300	Small Business Management (e)	4
AOS-1241	Records Management	3
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	3
MATH-1xxx	1000-level MATH course or higher	3
		15 - 17

<u>Third Semester</u>		<u>Credits</u>
AOS-1250	Electronic Spreadsheet Use and Design	3
AOS-2200	Word Processing II	3
AOS-2410	Office Management	3
AOS-2210	Presentation Software (a)... OR	3
BADM-1050	Professional Success Strategy (b) ... OR	3
MA-2010	Medical Terminology II (c)... OR	2
C&CR-1350	Legal Terminology (d)... OR	3
AOS-2250	Virtual Assistant/Virtual Cyber Office (e)	3
Communication...(See AAB Degree requirements)		3
Arts & Hum (see AAB/AAS degree requirements)		3
		17 - 18

<u>Fourth Semester</u>		<u>Credits</u>
ACCT-xxxx	ACCT elective course	3
AOS-2270	Desktop Publishing ... OR (a) (c) (d) (e)	3
BADM-1070	Introduction to Project Management (b)	3
AOS-2990	Office Procedures and Practices C	3
Soc and Beh Sci (See AAB/AAS degree requirements)		3
		12
PROGRAM TOTAL		60 - 62

C = Capstone course.

¹May be waived for students who can demonstrate 25 wpm typing speed by touch (use correct fingering and do not look at keys) on proficiency exam administered by the IT department. Waiver form must be signed by IT department.

OPTIONS

<u>(a) Administrative Office Specialist</u>		<u>Credits</u>
Program Total for option A = 60		
AOS 1220	Speed Building	2
AOS 2210	Presentation Software	3
AOS 2270	Desktop Publishing	3

<u>(b) Office Operations Management</u>		<u>Credits</u>
Program Total for Option B = 62		
BADM 1050	Professional Success Strategy	3
BADM 1070	Introduction to Project Management	3
BADM 1121	Principles of Management and Organizational Behavior	4

<u>(c) Medical Administrative Specialist</u>		<u>Credits</u>
Program Total for Option C=60		
AOS 2270	Desktop Publishing	3
MA 1020	Medical Terminology I	3
MA 2010	Medical Terminology II	2

<u>(d) Legal Administrative Specialist</u>		<u>Credits</u>
Program Total for Option D=60		
AOS 2270	Desktop Publishing	3
C&CR 1350	Legal Terminology	3
PL 1501	Law Office Technology	2

<u>(e) Virtual Assistant</u>		<u>Credits</u>
Program Total for Option E=62		
AOS 2250	Virtual Assistant/Virtual Cyber Office	3
AOS 2270	Desktop Publishing	3
BADM 1300	Small Business Management	4

BASIC OFFICE SKILLS

Short-Term Certificate

The AOS Basic Office Skills Short-Term Certificate prepares students for entry-level employment as alpha-numeric data entry operators, receptionists, and other general office occupations.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Listen, read and provide verbal, written and electronic instructions, direction and procedures; respond appropriately to coworkers, clients and other professionals.
4. Create, input, edit, organize and print various data/business documents accurately and according to business industry standards using available office technology.
5. Apply knowledge of various types of record classification systems using appropriate materials and equipment.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</u>		
AOS-1241	Records Management	3
IT-1000	Keyboarding *	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
IT-1060	Introduction to Windows	2
		12
<u>Second Semester</u>		<u>Credits</u>
AOS-1201	Word Processing I	4
		4
PROGRAM TOTAL		16

OFFICE OPERATIONS MANAGEMENT

Certificate of Proficiency

The one-year certificate program is designed to accommodate those who are employed full-time or are attending college on a part-time basis, seeking to upgrade their existing employment skills or begin a job in an office setting. The AOS Office Operations Management Certificate of Proficiency prepares individuals to pursue career advancement in the growing field of office management.

Degree: Students may apply credits toward the Administrative Office Systems Degree with an option in Office Operations Management.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.
4. Determine and use various office applications software to develop, document, and manage office project, procedures and systems.
5. Apply knowledge of time, resources, and office management to support effective office operations, guidelines and goals.

<u>First Semester</u>		<u>Credits</u>
Suggested Semester Sequence		
BADM-1000	Business Language Skills	2
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1000	Keyboarding ¹	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
MATH-1xxx	1000-level MATH course or higher	3
		18
<u>Second Semester</u>		<u>Credits</u>
AOS-1201	Word Processing I	4
AOS-1241	Records Management	3
AOS-1250	Electronic Spreadsheet Use and Design	3
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
		17
PROGRAM TOTAL		35

¹May be waived for students who can demonstrate 25 wpm typing speed on proficiency exam administered by the AOS department. Waiver form must be signed by AOS department.

VIRTUAL OFFICE ASSISTANT

Certificate of Proficiency

Virtual Office Assistant is a program for individuals who are interested in becoming Virtual Assistants (VAs). A virtual assistant is typically an entrepreneur who works from her or his home-office offering administrative and business support services to companies and/or professionals over the Internet.

Minimum two (2) years verifiable secretarial and/or office support work experience. This program is designed for individuals who are working in the field.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.
2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.
4. Determine and use various office applications software to develop, document, and manage office projects, procedures and systems.
5. Use entrepreneurial skills to setup and maintain a successful virtual office business.

Suggested Semester Sequence		<u>Credits</u>
<u>Summer Semester</u>		
ACCT-1011	Business Math Applications	3
AOS-1250	Electronic Spreadsheet Use and Design	3
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		12
<u>First Semester</u>		<u>Credits</u>
AOS-1241	Records Management	3
AOS-2210	Presentation Software	3
BADM-1070	Introduction to Project Management	3
MATH-1xxx	1000-level MATH course or higher	3
		12
<u>Second Semester</u>		<u>Credits</u>
AOS-2250	Virtual Assistant/Virtual Cyber Office	3
AOS-2270	Desktop Publishing	3
AOS-2990	Office Procedures and Practices	3
		9
PROGRAM TOTAL		33

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Bricklaying & Allied Crafts)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Bricklaying & Allied Crafts

Student must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Bricklaying Allied Crafts, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A three year apprenticeship emphasizes the skill set required of a skilled craftsman.

Bricklaying is the art and craft of building and fabricating in stone and brick. Bricklayers work in a variety of construction settings, building chimneys, partitions, and walls, working with stone, cinder and gypsum block, and brick. The work requires physical stamina, a solid mathematical sense, and an artistic eye.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- High School Diploma/GED
- Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.


Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, and follow directions as a member of the crew in order to meet the task at hand.
2. Exhibit pride of craftsmanship, plan/manage personal and professional life, and take opportunities to upgrade skills.
3. Use appropriate personal protective equipment and fall protection to ensure a safe work environment in accordance with the OSHA standards.
4. Apply knowledge of measurements, blueprint reading, materials, techniques, and tools to construct a structure in accordance with the architect and engineer's specifications and design.


First Semester	Suggested Semester Sequence	Credits
ATBL-1300	Basic Bricklaying Trade Skills	2
ATBL-1310	Bricklaying Materials, Tools and Equipment	2
ATBL-1320	Basic Construction Drawings	1
ATBL-1370	Construction Trades Safety	1
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
ENG-1010	College Composition I	3
ENG-101H	Honors College Composition I	3
CNST-1730	Construction Print Reading ... OR	2
BADM-xxxx	Business Elective	3
		17 - 18

Second Semester		Credits
ATBL-1330	Wall Construction I	2
ATBL-1340	Arch Construction I	2
ATBL-2120	Mortar Types and Identification	2
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
BADM-xxxx	Business Elective ... OR	3 - 4
CNST-xxxx	CNST Elective ... OR	
CNST-2330	Construction Scheduling	
MATH-1xxx	1000-level MATH course or higher	3
Communication...	(See AAS Degree requirements) ¹	3
		18 - 19

Third Semester		Credits
ATBL-2110	Concrete for Bricklaying	1
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATBL-xxxx	Elective	2
ATBL-xxxx	Elective	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective ... OR	3
CNST-2631	Construction Management Systems ... OR	
CNST-xxxx	CNST Elective ... OR	
FIN-1061	Personal Finance	
Soc and Beh Sci	(See AAB/AAS degree requirements)	3
		16

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World 	3
ATCM-1390	Basic Welding Skills	2
ATBL-2140	Intro to Bricklayer Foreman	1
BADM-xxxx	Business Elective ... OR	3
CNST-2990	Construction Estimating & Cost Analysis	
Arts & Hum	(see AAB/AAS degree requirements)	3
		12
	PROGRAM TOTAL	63 - 65

¹ENG-2151 Technical Writing highly recommended.

 = Capstone course.

ELECTIVES		Credits
<u>Construction Engineering Technology Sequence</u>		
Recommended electives in Construction Engineering Technology:		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
CNST 2631	Construction Management Systems	3
CNST 2990	Construction Estimating & Cost Analysis	3

Related Business & Management electives		Credits
Recommended electives in Business & Management:		
BADM 1020	Introduction to Business	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 1300	Small Business Management	4
BADM 2150	Business Law	4
BADM 2450	New Business Development	5
BADM 2470	Marketing Techniques for Small Business	3

BRICKLAYING & ALLIED CRAFTS

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with U. S. Department of Labor, Bureau of Apprenticeship and Training. Bricklayers, stone masons and tile setters lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the AAS/AIT degree in Bricklayer and Allied Crafts. Student must attain journey level status before certificate is awarded.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- High School Diploma/GED
- Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, and follow directions as a member of the crew in order to meet the task at hand.
2. Exhibit pride of craftsmanship, plan/manage personal and professional life, and take opportunities to upgrade skills.
3. Use appropriate personal protective equipment and fall protection to ensure a safe work environment in accordance with the OSHA standards.
4. Apply knowledge of measurements, blueprint reading, materials, techniques, and tools to construct a structure in accordance with the architect and engineer's specifications and design.

Suggested Semester Sequence

First Semester		Credits
ATBL-1300	Basic Bricklaying Trade Skills	2
ATBL-1310	Bricklaying Materials, Tools and Equipment	2
ATBL-1320	Basic Construction Drawings	1
ATBL-1370	Construction Trades Safety	1
ATCM-1330	Concrete Construction Equipment	2
ATBL-1340	Arch Construction I	2
ATBL-2120	Mortar Types and Identification	2
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
		16

Second Semester		Credits
ATBL-2110	Concrete for Bricklaying	1
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATCM-1390	Basic Welding Skills	2
ATBL-2140	Intro to Bricklayer Foreman	1
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
		9

Summer Semester		Credits
ATBL-2510	Advanced Brick-Block Construction	2
ATBL-2710	Advanced Bricklaying Skills	3
		5
PROGRAM TOTAL		30

APPLIED INDUSTRIAL TECHNOLOGY (Building Construction)

Short-Term Certificate

The Building Construction Program provides participants the opportunity to complete hands-on projects under the supervision of experienced craft-workers from the Building Construction (Trades) Program. Technical subject matter, applied mathematics, technical reading, blueprint interpretation, safety, health, and physical fitness are reinforced by completion of an extensive array of trade specific assignments. In addition, other employment opportunities are made available through elective courses.

The program courses are offered in a bundled format over multiple terms and in sequence.

Program Coordinator - 216-987-2859

Program Admission Requirements:

- COMPASS eligibility to ENG 0980 or departmental approval.
- COMPASS eligibility to MATH 0950 or ENG-0910 with grade of "C" or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Increase the participant's awareness of career path options in the construction skilled trades.
2. Inform the participants of the physical, and environmental nature associated with the trades.
3. Prepare the participant for the construction contractor hiring process including math assessment.
4. Prepare the participant for physically rigorous nature of construction trades industry.
5. Inform the participant of the seasonal nature of work, travel and transportation requirements.
6. Develop or enhance the participant's spatial visualization skills, and mechanical aptitude.
7. Instruct the participant in construction related mathematical calculations.
8. Introduce the participant to skilled trades common practices.
9. Provide the participant an awareness of the benefits offered by merit and union employment
10. Introduce participants to college policies, resources, and best approaches to study, and examination.
11. Introduce participant to principles and practices in sustainability, alternative energy, conservation, recycling, and structural weatherization.

Suggested Semester Sequence		Credits
First Semester		
AIT-1040	Spatial and Mechanical Reasoning	1
AIT-1050	Construction Industry Orientation	3
AIT-1060	Construction Tools	2
AIT-1120	Building Construction Trades Lab	3
AIT-xxxx	Elective	1 - 2
AIT-xxxx	Elective	1 - 2
AIT-xxxx	Elective	1 - 2
		12 - 15
PROGRAM TOTAL		12 - 15

APPLIED INDUSTRIAL TECHNOLOGY (Carpentry)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Carpentry

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. . A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Carpentry is the art and trade of cutting, working, and joining timber. Carpenters work with both structural materials in framing, as well as items such as doors, windows and staircases. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Carpentry.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Fabricate and install interior/exterior walls, stairs, doors, windows, roof components, flooring and exterior finish in order to build a residential home that meets customer specifications.
9. Fabricate, install and disassemble various concrete forms, frames and systems using appropriate crane and rigging hardware for bridges and commercial building according to customer specifications.
10. Fabricate walls, stairs, ceiling grids and install studs, drywall, ceilings, door, windows to meet a commercial client's specifications.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCT-1301	Introduction to Carpentry	2
ATCT-1320	Introduction to Hand and Power Tools	2
ATCT-1351	Metal Studs and Dry Walls	2
ATCT-1381	Wood Framing	2
CNST-1281	Construction Engineering Orientation	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		17

<u>Second Semester</u>		<u>Credits</u>
ATCT-1310	Carpentry Safety	2
ATCT-1331	Concrete Footers and Walls	2
ATCT-1370	Layout	2
ATCT-2361	Suspended Ceilings	2
ATCT-xxxx	Any ATCT elective course	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Communication...	(See AAS Degree requirements)	3
		16

<u>Third Semester</u>		<u>Credits</u>
ATCT-1491	Residential Steel Framing	2
ATCT-1610	Interior Finish	2
ATCT-2341	Concrete Specialties	2
ATCT-2370	Interior Systems Layout	2
CNST-1730	Construction Print Reading	2
Arts & Hum	(see AAB/AAS degree requirements)	3
Social & Behavioral Sci	(See AAB/AAS degree requirements)	3
		16

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATCT-1390	Welding for Carpentry	2
ATCT-2560	Interior Systems III	2
CNST-1510	Green Building & Sustainability I	3
CNST-2130	Construction Methods, Materials and Equipment	3
		13

PROGRAM TOTAL 62

<u>ELECTIVES</u>		<u>Credits</u>
<u>ATCT Electives</u>		
ATCT-1710	Stairs Layout	2
ATCT-2330	Trade Show	2
ATCT-2500	Exterior Finish	2
ATCT-2511	Concrete Columns and Decks	2
ATCT-2520	Stairs Installation	2
ATCT-2540	Roof Framing III	2

C = Capstone course.

CARPENTRY

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. This certificate emphasizes the skill set required to be a highly skilled craftsman. Carpentry is the art and trade of cutting, working, and joining timber. Carpenters work with both structural materials in framing, as well as items such as doors, windows and staircases. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Carpentry.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Intent-to-hire agreement with participating contractor

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, Fall Protection and MSDS.
8. Fabricate and install interior/exterior walls, stairs, doors, windows, roof components, flooring and exterior finish in order to build a residential home that meets customer specifications.
9. Fabricate, install and disassemble various concrete forms, frames and systems using appropriate crane and rigging hardware for bridges and commercial building according to customer specifications.

10. Fabricate walls, stairs, ceiling grids and install studs, drywall, ceilings, door, windows to meet a commercial client's specifications.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATCT-1301	Introduction to Carpentry	2
ATCT-1310	Carpentry Safety	2
ATCT-1320	Introduction to Hand and Power Tools	2
ATCT-1351	Metal Studs and Dry Walls	2
ATCT-1381	Wood Framing	<u>2</u>
		10
<u>Second Semester</u>		<u>Credits</u>
ATCT-1331	Concrete Footers and Walls	2
ATCT-1370	Layout	2
ATCT-1390	Welding for Carpentry	2
ATCT-1491	Residential Steel Framing	2
ATCT-1610	Interior Finish	2
ATCT-2361	Suspended Ceilings	2
ATCT-xxxx	Any ATCT elective course	<u>2</u>
		14
<u>Summer Semester</u>		<u>Credits</u>
ATCT-2341	Concrete Specialties	2
ATCT-2370	Interior Systems Layout	2
ATCT-2560	Interior Systems III	<u>2</u>
		6
PROGRAM TOTAL		30

ELECTIVES

<u>ATCT Electives</u>		<u>Credits</u>
Recommended courses to fulfill the elective requirement:		
ATCT 1710	Stairs Layout	2
ATCT 2330	Trade Show	2
ATCT 2500	Exterior Finish	2
ATCT 2511	Concrete Columns and Decks	2
ATCT 2520	Stairs Installation	2
ATCT 2540	Roof Framing III	2

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Cement Masonry)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Cement Masonry

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Cement Masonry, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice learns to install, repair, maintain and service finished surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids, monitor concrete curing, and use saws to cut expansion joints.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:

- High School Diploma/GED

Other Information:

- Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, communicate and work with co-workers, supervisor, suppliers and other trades in order to efficiently and timely perform tasks at hand in a team environment according to the Cement Mason Code of Conduct.
2. Demonstrate pride of craftsmanship.
3. Recognize and comply with OSHA safety standards and contractor's policies and procedures.
4. Read job specifications and blueprints to calculate quantity needs and quantity of various types of materials to ensure materials meet job requirements.
5. Identify and properly use the appropriate tools to set up, place and finish materials in a safe and efficient manner.
6. Use appropriate construction equipment and tools to move, place and finish materials in a safe and efficient manner.
7. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.
8. Maintain a fitness level to be able to meet the physical demands of the job.
9. Be certified in OSHA 16.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCM-1300	Fundamentals of Concrete Construction	2
ATCM-1310	Applied Technical Communications and Economics	2
ATCM-1320	Basic Plan Reading	2
ATCM-1330	Concrete Construction Equipment	2
ENG-1010	College Composition I ... OR	3

ENG-101H	Honors College Composition I	
CNST-xxxx	CNST Elective ... OR	3
BADM-xxxx	Business Elective	
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		17

<u>Second Semester</u>		<u>Credits</u>
ATCM-1340	OSHA Standards for the Construction Industry	3
ATCM-1400	Concrete/Cement Forming and Finishing	3
ATCM-1410	Commercial/Residential Form and Finish Work	4
ATCM-2320	Blueprint Fundamentals Construction	2
BADM-xxxx	Business Elective ... OR	3
CNST-1xxx	CNST elective ... OR	
FIN-1061	Personal Finance	<u>-</u>
		15

<u>Third Semester</u>		<u>Credits</u>
ATCM-2500	Fundamentals of Concrete Curing	1
ATCM-2510	Fundamentals of Concrete Joints	1
ATCM-2520	Basic Cement Patching	2
ATCM-2530	Concrete Restoration	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
Arts & Hum	(see AAB/AAS degree requirements)	<u>3</u>
		16

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATCM-2700	Advanced Concrete Finishing	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
Communication...	(See AAS Degree requirements)	3
Soc & Beh Sci/Sciences	(see AAB/AAS Degree Requirements)	<u>3</u>
		15

PROGRAM TOTAL 63

C = Capstone course.

<u>ELECTIVES</u>		<u>Credits</u>
BADM		
Recommended business electives:		
BADM 1020	Introduction to Business	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 1210	Labor-Management Relations	3
BADM 2150	Business Law	4
BADM 2450	New Business Development	5
BADM 2470	Marketing Techniques for Small Business	3

<u>CNST Sequence</u>		<u>Credits</u>
Recommended Construction Management electives:		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3

CEMENT MASONRY

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Cement Masonry, as well as earn an Associate Degree in Applied Industrial Technology. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice learns to install, repair, maintain and service finished surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids, monitor concrete curing, and use saws to cut expansion joints.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- High School Diploma/GED

Other Information:

- Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, communicate and work with co-workers, supervisor, suppliers and other trades in order to efficiently and timely perform tasks at hand in a team environment according to the Cement Mason Code of Conduct.
2. Demonstrate pride of craftsmanship.
3. Recognize and comply with OSHA safety standards and contractor's policies and procedures.
4. Read job specifications and blueprints to calculate quantity needs and quantity of various types of materials to ensure materials meet job requirements.
5. Identify and properly use the appropriate tools to set up, place and finish materials in a safe and efficient manner.
6. Use appropriate construction equipment and tools to move, place and finish materials in a safe and efficient manner.
7. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.
8. Maintain a fitness level to be able to meet the physical demands of the job.
9. Be certified in OSHA 16.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCM-1300	Fundamentals of Concrete Construction	2
ATCM-1310	Applied Technical Communications and Economics	2
ATCM-1320	Basic Plan Reading	2
ATCM-1330	Concrete Construction Equipment	2
ATCM-1340	OSHA Standards for the Construction Industry	3
ATCM-1400	Concrete/Cement Forming and Finishing	<u>3</u>
		14
<u>Second Semester</u>		<u>Credits</u>
ATCM-1410	Commercial/Residential Form and Finish Work	4
ATCM-2320	Blueprint Fundamentals-Construction	2
ATCM-2500	Fundamentals of Concrete Curing	1
ATCM-2510	Fundamentals of Concrete Joints	1
ATCM-2520	Basic Cement Patching	2
ATCM-2530	Concrete Restoration	<u>3</u>
		13
<u>Summer Semester</u>		<u>Credits</u>
ATCM-2700	Advanced Concrete Finishing	<u>3</u>
		6
	PROGRAM TOTAL	30

**APPLIED INDUSTRIAL TECHNOLOGY
(Communication Transport Systems)**

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Communication Transport Systems

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Communication Transport Systems, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Trade specifics include low voltage wiring, wireless communication transport system and other transmission mediums including fiberglass.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsperson.
- High school Diploma/GED
- 18 years old

Other Information:

- Valid driver's license; 18 years old

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
2. Communicate the scope of their work with crew members, general contractors, and end users.
3. Work independently and as a member of a crew that is focused on a common goal within your scope of authority.
4. Work in accordance with the communication workers of America's (CWA) Code of Ethics.
5. Use appropriate personal protective equipment, tools and work safely in accordance with OSHA, employer and customer safety protocols, and policies.
6. Apply basic math and electrical knowledge to transport cabling systems in an efficient manner following industry standards and safe work practices.
7. Apply math, electrical and mechanical knowledge and interpret prints to install, terminate, test and commission basic copper and fiber transport systems using best practices, industry standards, and safe work practices.
8. Apply math, electrical, mechanical, equipment and advanced copper and fiber knowledge to install, test, commission, and service end user equipment and systems using best practices, industry standards and safe work practices.
9. Plan, lead and manage the implementation of the scope of work to complete the project to the end users' satisfaction.

Suggested Semester Sequence


<u>First Semester</u>		<u>Credits</u>
ATCW-1010	Worker Safety for Communication Transport	2
ATCW-1020	Communication Worker History	2
ATCW-1040	Basic Information Systems	2
ATCW-xxxx	elective	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra or higher	5
		15

<u>Second Semester</u>		<u>Credits</u>
ATCW-1210	Introduction to Information Transport -Copper	2
ATCW-xxxx	elective	2
ATCW-xxxx	elective	2
BADM-xxxx	Business Elective ... OR	3
EET-xxxx	EET elective course ... OR	
CNST-xxxx	CNST Elective	
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective ... OR	
EET-xxxx	EET elective course	
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I	2
		16

<u>Third Semester</u>		<u>Credits</u>
ATCW-1250	Infrastructure Layout	2
ATCW-1270	Grounding and Bonding	1
ATCW-2010	Information Transport-Fiber	2
ATCW-2050	Audio Visual	1
ATCW-xxxx	elective	1
ATCW-xxxx	elective	1
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective ... OR	
EET-xxxx	EET elective course	
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		3
		14

<u>Fourth Semester</u>		<u>Credits</u>
ATCW-2070	Information Transport Circuits	1
ATCW-2120	Advanced Systems Transport	2
AIT-2990	Contracting In A Diverse World	3
BADM-xxxx	Business Elective ... OR	3
EET-xxxx	EET elective course	
Arts & Hum (see AAB/AAS degree requirements)		3
Communication...(See AAS Degree requirements)		3
		15

PROGRAM TOTAL 60

 = Capstone course.

COMMUNICATION TRANSPORT SYSTEMS

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Trade specifics include low voltage wiring, wireless communication transport system and other transmission mediums including fiberglass.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
2. Communicate the scope of their work with crew members, general contractors, and end users.
3. Work independently and as a member of a crew that is focused on a common goal within your scope of authority.
4. Work in accordance with the communication workers of America's (CWA) Code of Ethics.
5. Use appropriate personal protective equipment, tools and work safely in accordance with OSHA, employer and customer safety protocols, and policies.
6. Apply basic math and electrical knowledge to transport cabling systems in an efficient manner following industry standards and safe work practices.
7. Apply math, electrical and mechanical knowledge and interpret prints to install, terminate, test and commission basic copper and fiber transport systems using best practices, industry standards, and safe work practices.
8. Apply math, electrical, mechanical, equipment and advanced copper and fiber knowledge to install, test, commission, and service end user equipment and systems using best practices, industry standards and safe work practices.
9. Plan, lead and manage the implementation of the scope of work to complete the project to the end users' satisfaction.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCW-1010	Worker Safety for Communication Transport	2
ATCW-1020	Communication Worker History	2
ATCW-1040	Basic Information Systems	2
ATCW-1210	Introduction to Information Transport -Copper	2
ATCW-xxxx	elective	2
ATCW-xxxx	elective	1
ATCW-xxxx	elective	2
		13

<u>Second Semester</u>		<u>Credits</u>
ATCW-1250	Infrastructure Layout	2
ATCW-1270	Grounding and Bonding	1
ATCW-2010	Information Transport-Fiber	2
ATCW-2050	Audio Visual	1
ATCW-xxxx	elective	2
ATCW-xxxx	elective	2

EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I	2
		14

<u>Summer Semester</u>		<u>Credits</u>
ATCW-2070	Information Transport Circuits	1
ATCW-2120	Advanced Systems Transport	2
		3
	PROGRAM TOTAL	30

APPLIED INDUSTRIAL TECHNOLOGY (Construction Tending and Hazardous Material Abatement)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Industrial Technology with a concentration in Construction Tending and Hazardous Materials Abatement

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Construction Tending and Hazardous Materials Abatement, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. These apprentices assist other trades on the job site as well as prepare the job site by removing any hazardous materials.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Aptitude test
- High School Diploma/GED

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate and follow directions to be able to safely complete a job.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.
4. Recognize hazardous conditions and materials, wear appropriate personal protective equipment and take preventative measures following federal, state, and local policies and procedures.

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Construction Tending And Hazardous Material Abatement) (Continued)

5. Commit to and understand the seasonal, physical and hazardous nature of the construction industry and maintain a fitness level to be able to meet the physical requirements of the Construction Craft laborer profession.
6. Prepare the job site, assist with job site layout and perform final clean up according to established industry standards prior to transfer of the project to the owner.
7. Read job specifications and blueprints; use appropriate math to calculate the material needs of the skilled crafts being tended; schedule and properly place materials in a proactive and timely manner.
8. Use OSHA required personal protective equipment, techniques and procedures to abate and secure hazardous materials (i.e. asbestos, lead, hazardous waste).
9. Be certified in OSHA Confined Space Entry, fall protection, asbestos, scaffold user, lead, all terrain forklift, skid-steer loader, hazardous materials and OSHA 10.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATLB-1010	Craft Orientation for Laborers	1
ATLB-1020	Measurements and Leveling	2
ATLB-1210	Concrete Placement	2
ATLB-1340	Mason Tending	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	1
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		17

<u>Second Semester</u>		<u>Credits</u>
ATLB-2650	Demolition Techniques	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	3
CNST-xxxx	CNST Elective...OR	3
BADM-xxxx	Business Elective...OR	
FIN-1061	Personal Finance	
IT-1010	Introduction to Microcomputer Applications ...OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		16

<u>Third Semester</u>		<u>Credits</u>
ATLB-2110	Small Engines and Concrete Saws	2
ATLB-2120	Pneumatic Tools and Carpenter Tending	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
BADM-xxxx	Business Elective ...OR	3
CNST-1xxx	CNST elective	
Communication...(See AAS Degree requirements)		3
		14

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
BADM-xxxx	Business Elective ...OR	3
CNST-1xxx	CNST elective	
BADM-xxxx	Business Elective ...OR	3
CNST-2130	Construction Methods, Materials and Equipment	
Arts & Hum	(see AAB/AAS degree requirements)	3
Soc & Beh Sci	(see AAB/AAS degree requirements)	3
		15

PROGRAM TOTAL 62

C = Capstone course.

ELECTIVES

Construction Management Electives Credits

Select from following courses to fulfill CNST elective credits:

CNST-1281	Construction Engineering Orientation	3
CNST-1510	Green Building & Sustainability I	3
CNST-1730	Construction Print Reading	2
CNST-2330	Construction Scheduling	3
CNST-2631	Construction Management Systems	3

Business Electives Credits

Select from the following courses for business electives:

BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-2220	Organizational Behavior	3

CONSTRUCTION TENDING AND HAZARDOUS MATERIAL ABATEMENT

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. These apprentices assist other trades on the job site as well as prepare the job site by removing any hazardous materials. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Construction Tending and Hazardous Material Abatement.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Aptitude test

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate and follow directions to be able to safely complete a job.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.
4. Recognize hazardous conditions and materials, wear appropriate personal protective equipment and take preventative measures following federal, state, and local policies and procedures.
5. Commit to and understand the seasonal, physical and hazardous nature of the construction industry and maintain a fitness level to be able to meet the physical requirements of the Construction Craft laborer profession.
6. Prepare the job site, assist with job site layout and perform final clean up according to established industry standards prior to transfer of the project to the owner.
7. Read job specifications and blueprints; use appropriate math to calculate the material needs of the skilled crafts being tended; schedule and properly place materials in a proactive and timely manner.

8. Use OSHA required personal protective equipment, techniques and procedures to abate and secure hazardous materials (i.e. asbestos, lead, hazardous waste).
9. Be certified in OSHA Confined Space Entry, fall protection, asbestos, scaffold user, lead, all terrain forklift, skid-steer loader, hazardous materials and OSHA 10.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATLB-1010	Craft Orientation for Laborers	1
ATLB-1020	Measurements and Leveling	2
ATLB-1210	Concrete Placement	2
ATLB-1340	Mason Tending	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	1
ATLB-xxxx	Laborer Elective	<u>2</u>
		13

<u>Second Semester</u>		<u>Credits</u>
ATLB-2650	Demolition Techniques	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	<u>2</u>
		9

<u>Summer Semester</u>		<u>Credits</u>
ATLB-2110	Small Engines and Concrete Saws	2
ATLB-2120	Pneumatic Tools and Carpenter Tending	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	<u>2</u>
		8

PROGRAM TOTAL 30

APPLIED INDUSTRIAL TECHNOLOGY (Drywall Finishing)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Drywall Finishing

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Drywall Finisher, as well as earn an Associate of Applied Science Degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Drywall Finisher finishes drywall surfaces by applying materials and sanding in preparation for final painting or treatment.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Use hand, spray, and automated trade related tools and materials (mud, tape, mesh) effectively to complete job with minimum waste, using health and safety standards.
7. Use blueprints to verify materials and equipment needs to complete the job in a timely manner.

Suggested Semester Sequence

First Semester		Credits
ATDW-1310	Tools and Methods of Drywall Finishing	2
ATDW-1330	Materials and Methods of Drywall Finishing	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	

BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
MATH-1xxx	1000-level MATH course or higher	3
		18

Second Semester		Credits
ATDW-1620	Taping Tools and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-1660	Labor in American Society	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective ... OR	3
CNST-1281	Construction Engineering Orientation ... OR	
CNST-1510	Green Building & Sustainability I	
Communication...	(See AAS Degree requirements) ¹	3
		17


Third Semester		Credits
ATDW-2310	Automatic Taping Tools	2
ATDW-2330	Finishing Boxes	2
ATDW-2350	Filling Compounds and Procedures	2
ATPT-2320	Safe Work Practices	3
BADM-xxxx	Business Elective ... OR	2-3
CNST-1730	Construction Print Reading	
Arts & Hum	(see AAB/AAS degree requirements)	3
		14 - 15

Fourth Semester		Credits
ATDW-2340	Texturing	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2360	Foreman Training	2
ATPT-xxxx	ATPT elective course	2
AIT-2990	Contracting In A Diverse World	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	-
Soc & Beh Sci/Sciences	(see AAB/AAS Degree Requirements)	3
		17
	PROGRAM TOTAL	66 - 67

ELECTIVES		Credits
<u>Technical Electives</u>		
ATPT-1330	Filling Compounds and Procedures	2
ATPT-1620	Wood Finishing	2
ATPT-1630	Color Mixing and Matching	2
ATPT-2310	Wallcovering and Paperhanging	3
ATPT-2380	Special Coatings and Decorative Finishes	2

Business & Supervision Electives		Credits
BADM 1020	Introduction to Business	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 1210	Labor-Management Relations	3
BADM 1300	Small Business Management	4
BADM 2150	Business Law	4
BADM 2450	New Business Development	5

¹ENG-2151 Technical Writing highly recommended.

 = Capstone course.

DRYWALL FINISHING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Student must be currently working in a registered apprenticeship in conjunction with the U. S. Dept. of Labor, Bureau of Apprenticeship Training, and a partnering Joint Apprenticeship Training Committee. The three year apprenticeship emphasizes the technical skills of a craft worker. Drywall Finishing is the art and craft of applying plasterboard or other wallboard to ceilings or interior walls of buildings, working with decorative quality and include lathers who fasten wooden, metal, or rock board lath to walls, ceilings or partitions of buildings to provide support base for plaster, fire-proofing, or acoustical material.

The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Drywall Finishing.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participants must be currently working in a registered apprenticeship in conjunction with the U. S. Dept. of Labor, Bureau of Apprenticeship & Training, and a partnering Joint Apprenticeship Training Committee

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Use hand, spray, and automated trade related tools and materials (mud, tape, mesh) effectively to complete job with minimum waste, using health and safety standards.
7. Use blueprints to verify materials and equipment needs to complete the job in a timely manner.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATDW-1310	Tools and Methods of Drywall Finishing	2
ATDW-1620	Taping Tools and Procedures	2
ATEL-1330	National Electric Code	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATPT-1340	Wall Preparation and Repair	2
		13
 <u>Second Semester</u>		 <u>Credits</u>
ATDW-2310	Automatic Taping Tools	2
ATDW-2330	Finishing Boxes	2
ATDW-2350	Filling Compounds and Procedures	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-1660	Labor in American Society	2
ATPT-2320	Safe Work Practices	3
		13
 <u>Summer Semester</u>		 <u>Credits</u>
ATDW-2340	Texturing	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2360	Foreman Training	2
		6
	 PROGRAM TOTAL	 32

APPLIED INDUSTRIAL TECHNOLOGY (Electrical Construction)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Electrical Construction

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Electrical Construction, as well as earn an Associate of Applied Science Degree. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Electrician installs, maintains, operates, or repairs electrical equipment. The work of the electrical construction worker can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired in this well-designed and administered apprenticeship training program prepare the electrical worker for the entire range of work. Much of the work involves installation, assembling, testing, repairing, layout and design of electrical wiring, fixtures, and apparatus used for power, light, heating, air conditioning and many types of control systems. Many jobs now incorporate computers and fiber optics.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- High School Diploma/GED
- One year of high school Algebra or one college level Algebra class
- Electrician's English Comprehension and Mathematics Tests

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Plan, organize, and coordinate with electrical team and other trades to resolve conflict and ensure the job runs efficiently.
2. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
3. Work safely according to OSHA, NFPA, Standards, contractor and customer safety protocols and policies.
4. Work in accordance with IBEW/NECA Code of Excellence.
5. Apply knowledge of math, basic electrical theory, blueprints, and tools to install basic wiring system that meets industry codes and standards.
6. Apply knowledge of technical math, motor control, AC theory, raceway systems, and transformers to install, test, and repair advance wiring systems according to the National Electrical Code and other applicable industry standards.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATEL-1300	Direct Current Fundamentals	3
ATEL-1330	National Electric Code	2
ATEL-1350	Industrial Safety	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
CNST-1730	Construction Print Reading ... OR	2-3
FIN-1061	Personal Finance ... OR	
BADM-xxxx	Business Elective	
MATH-1270	Intermediate Algebra or higher ¹	<u>4</u>
		15 - 16

<u>Second Semester</u>		<u>Credits</u>
ATEL-1310	Alternating Current Fundamentals	3
ATEL-1360	Blueprint Fundamentals - Electrical	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications ... OR	
IT-xxxx	Information Technology elective	
Communication...	(See AAS Degree requirements) ²	3
Social and Beh Sci	(See AAB/AAS degree requirements)	<u>3</u>
		14

<u>Third Semester</u>		<u>Credits</u>
ATEL-2300	Industrial Electronics Fundamentals I	3
ATEL-2310	Industrial Electronics Fundamentals II	3
ATEL-2350	Programmable Logic Controllers	3
CNST-2130	Construction Methods, Materials and Equipment ... OR	3
BADM-xxxx	Business Elective	
CNST-2990	Construction Estimating & Cost Analysis ... OR	3
BADM-xxxx	Business Elective	
Arts & Hum Requirement	(see AAB/AAS degree requirements)	<u>3</u>
		18

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATEL-2500	AC/DC Motors and Generators	4
ATEL-2510	Motor Controls	3
ATEL-2700	Electrical Instrumentation	4
CNST-2631	Construction Management Systems ... OR	3
BADM-xxxx	Business Elective	-
		17
	PROGRAM TOTAL	64 - 65

ELECTIVES		<u>Credits</u>
<u>Business electives</u>		
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

¹MATH-1800-1820 may not be used to meet this requirement.

²ENG-2151 Technical Writing highly recommended.

C = Capstone course.

ELECTRICAL CONSTRUCTION

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Electrician installs, maintains, operates, or repairs electrical equipment. The work of the electrical construction worker can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired in this well-designed and administered apprenticeship training program prepare the electrical worker for the entire range of work. Much of the work involves installation, assembling, testing, repairing, layout and design of electrical wiring, fixtures, and apparatus used for power, light, heating, air conditioning and many types of control systems. Many jobs now incorporate computers and fiber optics. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Electrical Construction.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- High School Diploma/GED
- One year of high school Algebra or one college level Algebra class
- Electrician's English Comprehension and Mathematics Tests

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Plan, organize, and coordinate with electrical team and other trades to resolve conflict and ensure the job runs efficiently.
2. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.
3. Work safely according to OSHA, NFPA, Standards, contractor and customer safety protocols and policies.
4. Work in accordance with IBEW/NECA Code of Excellence.
5. Apply knowledge of math, basic electrical theory, blueprints, and tools to install basic wiring system that meets industry codes and standards.
6. Apply knowledge of technical math, motor control, AC theory, raceway systems, and transformers to install, test, and repair advance wiring systems according to the National Electrical Code and other applicable industry standards.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATEL-1300	Direct Current Fundamentals	3
ATEL-1310	Alternating Current Fundamentals	3
ATEL-1330	National Electric Code	2
ATEL-1350	Industrial Safety	1
ATEL-1360	Blueprint Fundamentals - Electrical	<u>2</u>
		11
<u>Second Semester</u>		<u>Credits</u>
ATEL-2300	Industrial Electronics Fundamentals I	3
ATEL-2310	Industrial Electronics Fundamentals II	3
ATEL-2350	Programmable Logic Controllers	3
ATEL-2500	AC/DC Motors and Generators	<u>4</u>
		13
<u>Summer Semester</u>		<u>Credits</u>
ATEL-2510	Motor Controls	3
ATEL-2700	Electrical Instrumentation	<u>4</u>
		7
PROGRAM TOTAL		31

APPLIED INDUSTRIAL TECHNOLOGY (Floorlaying)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Floorlaying

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Floorlayer, as well as earn an Associate of Applied Science Degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Floorlayer cuts, fits and installs hardwood flooring and various types of underlayment to insure smooth, level surfaces for a finished floor; scribes, cuts, fits, layout and seams tile and sheet goods. Also is an expert at cutting, binding, sewing and installing carpet.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Intent-to-hire agreement with participating contractor

Other Information:

- An apprenticeship is a full-time commitment in which the apprentices work most of the time in the industry and attend classes on regular intervals to learn new skills.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and interpret blueprints, specifications, and finish schedule to complete the floor correctly.
2. Conduct tests to verify potential moisture and alkalinity in the floor to ensure it is ready to accept material to be installed.
3. Assess substrate for imperfections (bumps, lumps, holes, saw joints, etc.) to determine and perform required floor preparations to ensure a smooth and flat installation.
4. Inspect required materials for flaws and install properly using appropriate tools and techniques in accordance with job and layout specifications.
5. Inspect equipment to ensure safe working order and conduct all work in accordance with federal, state, and local regulations, and jobsite and contractor safety policies and procedures.
6. Verbally communicate, negotiate, and resolve jobsite issues with project manager, contractor, superintendent, architect, journeymen, and other craftsmen to plan and execute the job.
7. Work independently and in a team environment to accomplish the job in a timely and professional manner.
8. Sit for the install certification.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATCT-1301	Introduction to Carpentry	2
ATFL-1450	Floorlaying Concepts ¹	2
ATFL-1600	Modular Tile ¹	2
ATFL-1610	Jute and Action Back Carpeting ¹	2
ATFL-1620	Ceramics I	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		16
<u>Second Semester</u>		
ATFL-1630	Wood Flooring I	2
ATFL-1640	Sheet Goods Concepts	2
ATFL-1650	Sheet Goods - Flash Coving	2
ATFL-1720	Sheet Goods - Geometric Layout and Inlay	2
ATFL-1730	Unitary Back and Enhancer Back Carpeting	2
CNST-1730	Construction Print Reading	2
MATH-1xxx	1000-level MATH course or higher	3
		15
<u>Third Semester</u>		
ATFL-1300	ATFL Residential Installation Procedures	2
ATFL-xxxx	Floorlaying elective	2
CNST-2130	Construction Methods, Materials and Equipment	3
	Arts & Hum (see AAB/AAS degree requirements)	3
	Communication...(See AAS Degree requirements)	3
		13
<u>Fourth Semester</u>		
AIT-2990	Contracting In A Diverse World C	3
ATFL-2300	Ceramics II	2
ATFL-2400	Sheet Goods - Specialty Products	2
CNST-2631	Construction Management Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
	Social and Beh Sci (See AAB/AAS degree requirements)	3
		16
PROGRAM TOTAL		60

¹Consecutively scheduled courses.

C = Capstone course.

FLOORLAYING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Floorlayer cuts, fits and installs hardwood flooring and various types of underlayment to insure smooth, level surfaces for a finished floor, scribes, cuts, fits, layout and seam tile and sheet goods. Also is an expert at cutting, binding, sewing and installing carpet. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Floorlaying.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and interpret blueprints, specifications, and finish schedule to complete the floor correctly.
2. Conduct tests to verify potential moisture and alkalinity in the floor to ensure it is ready to accept material to be installed.
3. Assess substrate for imperfections (bumps, lumps, holes, saw joints, etc.) to determine and perform required floor preparations to ensure a smooth and flat installation.
4. Inspect required materials for flaws and install properly using appropriate tools and techniques in accordance with job and layout specifications.
5. Inspect equipment to ensure safe working order and conduct all work in accordance with federal, state, and local regulations, and jobsite and contractor safety policies and procedures.
6. Verbally communicate, negotiate, and resolve jobsite issues with project manager, contractor, superintendent, architect, journeymen, and other craftsmen to plan and execute the job.
7. Work independently and in a team environment to accomplish the job in a timely and professional manner.
8. Sit for the install certification.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCT-1301	Introduction to Carpentry	2
ATFL-1450	Floorlaying Concepts	2
ATFL-1630	Wood Flooring I	2
ATFL-1640	Sheet Goods Concepts	2
ATFL-xxxx	Floorlaying elective	<u>2</u>
		10

<u>Second Semester</u>		<u>Credits</u>
ATFL-1300	ATFL Residential Installation Procedures	2
ATFL-1600	Modular Tile	2
ATFL-1610	Jute and Action Back Carpeting	2
ATFL-1620	Ceramics I	2
ATFL-1650	Sheet Goods - Flash Coving	2
ATFL-1720	Sheet Goods - Geometric Layout and Inlay	2
ATFL-1730	Unitary Back and Enhancer Back Carpeting	<u>2</u>
		14

<u>Summer Semester</u>		<u>Credits</u>
ATFL-2300	Ceramics II	2
ATFL-2400	Sheet Goods - Specialty Products	2
ATFL-xxxx	Floorlaying elective	<u>2</u>
		6

PROGRAM TOTAL 30

APPLIED INDUSTRIAL TECHNOLOGY (Glazing)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Glazing

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Glazier, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Glazier cuts and installs all types of glass. Materials include clear and heat absorbing glass, obscure glass, mirrors, leaded glass panels and insulating glass. The glazier also fabricates aluminum entrances, sidelights and show windows, and works with plastic and porcelain panels in metal and wood frames.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:

- High School Diploma or GED required.
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Interpret drawings and use principles of glass, layout techniques, math, materials, tools and equipment to properly fabricate, assemble, and install all types of glass window and door systems.
7. Sit for welding certification as it relates to the glazing industry.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATGL-1330	Hand Tools for Glaziers	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
BADM-xxxx	Business Elective ... OR	2-3
CNST-1xxx	CNST elective ... OR	
CNST-1730	Construction Print Reading ... OR	
FIN-1061	Personal Finance	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		15 - 16
<u>Second Semester</u>		
ATGL-1620	Glass and Mirror Replacement and Installation	2
ATGL-1630	Basic Welding	2
ATGL-1640	Door Fabrication and Installation	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
BADM-xxxx	Business Elective ... OR	3
CNST-1xxx	CNST elective ... OR	
CNST-2130	Construction Methods, Materials and Equipment ... OR	
ACCT-1011	Business Math Applications	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Communication...	(See AAS Degree requirements)	3
		17
<u>Third Semester</u>		
ATGL-2330	Transits, Leveling Instruments and Lasers	2
ATGL-2350	Curtainwall Fabrication and Installation	2
ATPT-2320	Safe Work Practices	3
ATDW-xxxx	ATDW elective course ... OR	2
ATGL-xxxx	ATGL elective course ... OR	
ATPT-xxxx	ATPT elective course	
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
Arts & Hum	(see AAB/AAS degree requirements)	3
		15
<u>Fourth Semester</u>		
AIT-2990	Contracting In A Diverse World C	3
ATGL-2340	Advanced Welding	2
ATPT-1640	Rigging and Hoisting	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
Soc & Beh Sci/Sciences	(see AAB/AAS Degree Requirements)	3
		13
	PROGRAM TOTAL	60 - 61

(continued on next page)

**APPLIED INDUSTRIAL TECHNOLOGY
(Glazing) (Continued)**

<u>Construction Management Electives</u>		<u>Credits</u>
Recommended electives for Construction Management:		
CNST-1281	Construction Engineering Orientation	3
CNST-1510	Green Building & Sustainability I	3
CNST-1730	Construction Print Reading	2
CNST-2130	Construction Methods, Materials and Equipment	3

<u>Business & Supervision Electives</u>		<u>Credits</u>
Recommended electives for Business & Supervision:		
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3

<u>Entrepreneur Electives</u>		<u>Credits</u>
Recommended electives for Entrepreneur:		
BADM-1300	Small Business Management	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

<u>Personal Finance</u>		<u>Credits</u>
Recommended electives for Personal Finance:		
ACCT-1011	Business Math Applications	3
FIN-1061	Personal Finance	3

C = Capstone course.

GLAZING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. This certificate emphasizes the skill set required to be a highly skilled craftsman. The Glazier cuts and installs all types of glass. Materials include clear and heat absorbing glass, obscure glass, mirrors, leaded glass panels and insulating glass. Glazier also fabricates aluminum entrances, sidelights and show windows, and works with plastic and porcelain panels in metal and wood frames. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Glazing.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Aptitude test - Contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Interpret drawings and use principals of glass, layout techniques, math, materials, tools and equipment to properly fabricate, assemble, and install all types of glass window and door systems.
7. Sit for welding certification as it relates to the glazing industry.

<u>First Semester</u>		<u>Suggested Semester Sequence</u>	<u>Credits</u>
ATGL-1330	Hand Tools for Glaziers		2
ATGL-1620	Glass and Mirror Replacement and Installation		2
ATGL-1630	Basic Welding		2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing		2
ATPT-1320	Safety Standards for Construction (OSHA-10)		3
ATGL-xxxx	ATGL elective course ... OR		2
ATPT-xxxx	ATPT elective course ... OR		2
ATDW-xxxx	ATDW elective course		2
			13

<u>Second Semester</u>		<u>Credits</u>
ATGL-1640	Door Fabrication and Installation	2
ATGL-2330	Transits, Leveling Instruments and Lasers	2
ATGL-2350	Curtainwall Fabrication and Installation	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-2320	Safe Work Practices	3
ATDW-xxxx	ATDW elective course ... OR	2
ATGL-xxxx	ATGL elective course ... OR	
ATPT-xxxx	ATPT elective course	
		13

<u>Summer Semester</u>		<u>Credits</u>
ATGL-2340	Advanced Welding	2
ATPT-1640	Rigging and Hoisting	2
		4

PROGRAM TOTAL 30

APPLIED INDUSTRIAL TECHNOLOGY (Ironworking)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Ironworking

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Ironworking, as well as an Associate of Applied Science degree. A three-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Aptitude Test
- High School Diploma/GED
- Compass Placement Test, eligibility for ENG-1010
- Compass Placement Test, eligibility for MATH-1xxx

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure effective and safe completion of the job and to be environmentally sensitive.
2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.
3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.
4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.
5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.
9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

Suggested Semester Sequence

First Semester		Credits
ATIW-1300	Structural Steel Concepts	2
ATIW-1310	Safety for Ironworkers	1
ATIW-1320	Steel Construction Procedures	1
ATIW-1330	Erection Concepts and Practices	3
ATIW-1410	Practical Applications of Reinforcing Steel	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		14

Second Semester		Credits
ATIW-1600	Welding Fundamentals for Ironworkers	3
ATIW-2300	Shielded Metal Arc Welding	3
ATIW-2310	Welding Specialties	3
ATIW-2320	Welding Blueprints and Design	3
BADM-xxxx	Business Elective ... OR	3
CNST-1xxx	CNST elective	
Communication...	(See AAS Degree requirements) ¹	3
		18

Third Semester		Credits
ATIW-2330	Pre-Construction Planning of Specialty Applications	2
ATIW-2340	Specialty Installation Equipment	2
ATIW-2350	Ornamental Systems and Railings	2
ATIW-2360	Ornamental Applications	2
BADM-xxxx	Business Elective ... OR	3
CNST-1xxx	CNST elective	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
Arts & Hum	(see AAB/AAS degree requirements)	3
		17

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World C	3
ATIW-2500	Rigging and Hoisting	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
Soc & Beh Sci/Sciences	(see AAB/AAS Degree Requirements)	3
		15
	PROGRAM TOTAL	64

¹ENG-2151 Technical Writing highly recommended.

C = Capstone course.

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APPLIED INDUSTRIAL TECHNOLOGY
(Ironworking) (Continued)

ELECTIVES

<u>Business electives</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

<u>Construction Management electives</u>		<u>Credits</u>
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3

IRONWORKING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Ironworking.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Aptitude Test - contact Program Coordinator for information.
- Applicants are reviewed and selected by committee for admission to the program.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure

effective and safe completion of the job and to be environmentally sensitive.

2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.
3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.
4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.
5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe and effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.
9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATIW-1300	Structural Steel Concepts	2
ATIW-1310	Safety for Ironworkers	1
ATIW-1320	Steel Construction Procedures	1
ATIW-1330	Erection Concepts and Practices	3
		7

<u>Second Semester</u>		<u>Credits</u>
ATIW-1600	Welding Fundamentals for Ironworkers	3
ATIW-1400	Principles of Reinforcing Steel	2
ATIW-1410	Practical Applications of Reinforcing Steel	1
ATIW-2300	Shielded Metal Arc Welding	3
ATIW-2310	Welding Specialties	3
ATIW-2320	Welding Blueprints and Design	3
		15

<u>Summer Semester</u>		<u>Credits</u>
ATIW-2330	Pre-Construction Planning of Specialty Applications	2
ATIW-2340	Specialty Installation Equipment	2
ATIW-2350	Ornamental Systems and Railings	2
ATIW-2360	Ornamental Applications	2
ATIW-2500	Rigging and Hoisting	3
		11

PROGRAM TOTAL 33

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Manufacturing Technology)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Manufacturing Technology

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The Apprenticeship Program prepares the student to work as a skilled Machinist, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Machinists or Tool Makers are involved in the manufacture of precision machined metal components used by many industries including the aerospace, automotive, medical, and energy fields. Many of the machine tools are run by computer numerical control (CNC). The Machinist of today must possess a wide skill set of mathematical knowledge, technical disciplines, and the ability to work independently and in team environments. Working from blueprints or drawings, machinists use a variety of specialized metal cutting machine tools to produce precision parts.

Apprenticeship Coordinator - 216-987-3058

Program Admission Requirements:

- High School Graduate or GED Equivalency
- Applicants must be sponsored by a participating employer

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions and collaborate with co-workers and supervisor during the manufacturing process to produce a high quality product.
2. Be reliable, conscientious, respectful and committed to the organization's mission.
3. Apply principles and practice of safety while performing daily tasks.
4. Recognize, analyze and apply knowledge, resources and creativity to resolve problems as they arise.
5. Apply advanced concepts of shop math, blueprint reading, inspection and knowledge of machining and manufacturing principles to produce a quality product that meets customer specification in a safe and efficient manner.

First Semester	Suggested Semester Sequence	Credits
ATMT-1100	Manufacturing Skills I	3
ATMT-1110	Manufacturing Skills II	2
ATMT-1200	Machine Tool Theory	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
ISET-1310	Mechanical Power Transmission	2
MATH-1xxx	1000-level MATH course or higher	3
		17

Second Semester		Credits
ATMT-1300	Manufacturing Procedures	2
ATMT-1500	Manufacturing Technology Skills I	4
ATMT-1600	Introduction to CAD	2
BADM-1020	Introduction to Business	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		17

Third Semester		Credits
ATMT-2300	Advanced Manufacturing Procedures	2
ATMT-2500	Manufacturing Technology Skills II	4
ATMT-2600	CNC Programming / Operations	2
BADM-1120	Principles of Management	4
Arts & Hum	(see AAB/AAS degree requirements)	3
Soc & Beh Sci/Sciences	(see AAB/AAS Degree Requirements)	3
		18

Fourth Semester		Credits
ATMT-2620	CAM Principles	2
ATMT-2700	Manufacturing Technology Skills III	4
ATMT-2990	Manufacturing Operation Principles C	3
ATMT-2xxx	Any 2000 level ATMT elective course	2
ATMT-2xxx	Any 2000 level ATMT elective course	2
ISET-1300	Mechanical/Electrical Print Reading	2
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	2
		17
PROGRAM TOTAL		69

C = Capstone course.

CNC MACHINING AND COMPOSITES MANUFACTURING

Short-Term Certificate

The CNC Machining and Composites Manufacturing Program is a Fast-Track Training Program for students looking to gain entry into the areas of Composite Manufacturing and Precision Machining. The program is divided equally between classroom and hands-on training. Students learn the fundamentals of becoming a Skilled Machinist on both manual and CNC machine tools. The CNC Machining and Composites Manufacturing Technology Program provides the theoretical and hands-on experience to enable the student to enter the industry at the Pre-Apprenticeship level.

Degree: Students may apply credits toward AIT (Manufacturing Technology) Degree Program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions and collaborate with co-workers and supervisor during the manufacturing process to produce a high quality product.
2. Be reliable, conscientious, respectful and committed to the organization's mission.

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CNC MACHINING AND COMPOSITES MANUFACTURING (Continued)

- Apply principles and practice of safety while performing daily tasks.
- Recognize, analyze and apply knowledge, resources and creativity to resolve problems as they arise.
- Apply the basic concepts of shop math, blueprint reading, inspection, and knowledge of machining and manufacturing principles to produce a quality product that meets customer specification in a safe and efficient manner.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATMT-1000	Mechanical and Spatial Relations	4
ATMT-1100	Manufacturing Skills I	3
ATMT-1120	Machine Operations I	6
		13
<u>Second Semester</u>		<u>Credits</u>
ATMT-1110	Manufacturing Skills II	2
ATMT-1200	Machine Tool Theory	4
ATMT-1300	Manufacturing Procedures	2
ATMT-2120	Machine Operations II	6
		14
PROGRAM TOTAL		27

APPLIED INDUSTRIAL TECHNOLOGY (Millwrighting)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Millwrighting

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Millwrighting, as well as earn an Associate of Applied Science degree. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Millwrights install, maintain, and troubleshoot industrial equipment such as conveyors, monorails, combustion turbines, and various rotating equipment.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
- Work independently and in a team environment to accomplish the job in a timely and professional manner.

- Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
- Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
- Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
- Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
- Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
- Apply knowledge of mechanics, welding, tools and equipment to diagnose, recommend, design, fabricate and install machine and conveyor compressors and tools that efficiently solve a given customer problem(s) within their time frame and budget.
- Move and install machinery using fork lifts, rigging hardware and tools in a safe, effective and efficient manner.
- Use precision tools to check for tolerances, and perform alignment within .001 of an inch in order to recommend necessary repairs of turbines, pumps and other related power plant equipment.
- Be certified in forklift, rigging, aerial lift, welding, high torque and turban.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCT-1301	Introduction to Carpentry	2
ATMW-1320	Introduction to Millwrighting	2
ATMW-1330	Print Reading for Millwrights	2
ATMW-1350	Hydraulics/Centrifugal Pumps	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		14

<u>Second Semester</u>		<u>Credits</u>
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
ATMW-1720	Machinery Installation	2
ATMW-2120	Shaft Alignment	2
CNST-1730	Construction Print Reading	2
Communication...	(See AAS Degree requirements)	3
		13

<u>Third Semester</u>		<u>Credits</u>
ATCT-1310	Carpentry Safety	2
ATMW-2130	Shaft Alignment II	2
ATMW-2230	Millwright Pile Driver Weld II	2
ATMW-2350	Floor Conveyor	2
CNST-2130	Construction Methods, Materials and Equipment	3
MATH-1xxx	1000-level MATH course or higher	3
Arts & Hum	(see AAB/ AAS degree requirements)	3
		17

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Millwrighting) (Continued)

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World C	3
ATMW-2520	Millwright Pile Driver Weld III ¹	2
ATPD-2700	Millwright-Pile Driver Weld IV ¹	2
ATXX-xxxx	ATxx Elective Apprenticeship course	2 - 3
CNST-2631	Construction Management Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
Soc & Beh Sci (see AAB/ AAS degree requirements)		<u>3</u>
		18 - 19
PROGRAM TOTAL		62 - 63

¹Consecutively scheduled course.

C = Capstone course.

MILLWRIGHTING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Millwrights install, maintain, and troubleshoot industrial equipment such as conveyors, monorails, combustion turbines, and various rotating equipment. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Millwrighting.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Intent-to-hire agreement with participating contractor.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
- Work independently and in a team environment to accomplish the job in a timely and professional manner.
- Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
- Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive

work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

- Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
- Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
- Be certified in OSHA, CPR/First Aid, Scaffold, Fall Protection and MSDS.
- Apply knowledge of mechanics, welding, tools and equipment to diagnose, recommend, design, fabricate and install machine and conveyor compressors and tools that efficiently solve a given customer problem(s) within their time frame and budget.
- Move and install machinery using fork lifts, rigging hardware and tools in a safe, effective and efficient manner.
- Use precision tools to check for tolerances, and perform alignment within .001 of an inch in order to recommend necessary repairs of turbines, pumps and other related power plant equipment.
- Be certified in forklift, rigging, aerial lift, welding, high torque and turban.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATMW-1320	Introduction to Millwrighting	2
ATMW-1330	Print Reading for Millwrights	2
ATMW-1350	Hydraulics/Centrifugal Pumps	2
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	<u>2</u>
		12

Second Semester		Credits
ATCT-1310	Carpentry Safety	2
ATMW-1720	Machinery Installation	2
ATMW-2120	Shaft Alignment	2
ATMW-2350	Floor Conveyor	2
ATMW-2230	Millwright Pile Driver Weld II	2
ATXX-xxxx	ATxx Elective Apprenticeship course	<u>2 - 3</u>
		12 - 13

Summer Semester		Credits
ATMW-2130	Shaft Alignment II	2
ATMW-2520	Millwright Pile Driver Weld III	2
ATPD-2700	Millwright-Pile Driver Weld IV	<u>2</u>
		6

PROGRAM TOTAL 30 - 31

APPLIED INDUSTRIAL TECHNOLOGY (Operating Engineers)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Operating Engineers

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Operating Engineers, as well as earn an Associate of Applied Science Degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Graduate or GED Equivalency

Other Information:

- Aptitude Test
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.
2. Operate and maintain a variety of construction equipment in a safe and productive manner.
3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.
4. Plan and manage personal and professional life to accommodate all job requirements, including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.
5. Commit to and understand the nature of working in the construction trade, especially, planning for seasonal work.
6. Communicate verbally, nonverbally, and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.
7. Be prepared to sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

		Suggested Semester Sequence	<u>Credits</u>
<u>First Semester</u>			
ATOE-1100	Operating Engineering Concepts		4
ATOE-1200	Basic Mechanical Concepts		3
ATOE-1650	Graders and Plans		2
BADM-xxxx	Business Elective ... OR		3
CNST-xxxx	CNST Elective		
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		
MATH-1xxx	1000-level MATH course or higher		3
			18

			<u>Credits</u>
<u>Second Semester</u>			
ATOE-1700	Paving, Tractor, Backhoe Operators		3
ATOE-2100	Mobile Crane		2
ATOE-2600	Bulldozer Practice		3
BADM-xxxx	Business Elective ... OR		3
CNST-xxxx	CNST Elective		
IT-1010	Introduction to Microcomputer Applications ... OR		3
IT-101H	Honors Introduction to Microcomputer Applications		
Communication...	(See AAS Degree requirements) ¹		3
			17

			<u>Credits</u>
<u>Third Semester</u>			
ATOE-2200	Mechanical Repair		3
ATOE-2620	Backhoe Practice		3
ATOE-xxxx	ATOE elective course		1 - 3
BADM-xxxx	Business Elective ... OR		3
CNST-1730	Construction Print Reading ... OR		2-3
FIN-1061	Personal Finance		
Natural Sciences Requirement	(see AAB/AAS requirements)		3
			12 - 15

			<u>Credits</u>
<u>Fourth Semester</u>			
AIT-2990	Contracting In A Diverse World C		3
ATOE-2640	Advanced Grader Practice		3
ATOE-2660	Grader Safety		2
BADM-xxxx	Business Elective ... OR		3
CNST-2130	Construction Methods, Materials and Equipment		
Soc & Beh Sci	(See AAB/AAS degree requirements) ²		3
			14
PROGRAM TOTAL			61 - 64

¹ENG-2151 Technical Writing or SPCH-1000 Interpersonal Communication highly recommended.

²Recommend PSY-1050.

C = Capstone course.

		<u>Credits</u>
<u>ELECTIVES</u>		
<u>Technical Electives</u>		
Elective courses to be selected as indicated throughout the sequence.		
ATOE 2650	Safety Training Passport	1
ATOE 2670	Rough Terrain Forklift Operation	2
ATOE 2680	Hazardous Material Handling and Field Safety	2

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Operating Engineers) (Continued)

<u>Business Electives</u>		<u>Credits</u>
Recommended electives in business		
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

<u>Construction Management</u>		<u>Credits</u>
Recommended electives in Construction Management		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3

OPERATING ENGINEERS

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Operating Engineers.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Aptitude test – contact Program Coordinator for information.
- Intent-to-hire agreement with participating contractor.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.

2. Operate and maintain a variety of construction equipment in a safe and productive manner.
3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.
4. Plan and manage personal and professional life to accommodate all job requirements, (including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.
5. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.
6. Communicate verbally, non verbally, and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.
7. Sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATOE-1100	Operating Engineering Concepts	4
ATOE-1200	Basic Mechanical Concepts	3
ATOE-1650	Graders and Plans	2
ATOE-1700	Paving, Tractor, Backhoe Operators	3
		12

<u>Second Semester</u>		<u>Credits</u>
ATOE-2100	Mobile Crane	2
ATOE-2200	Mechanical Repair	3
ATOE-2600	Bulldozer Practice	3
ATOE-2620	Backhoe Practice	3
ATOE-xxxx	ATOE elective course	1 - 3
		12 - 14

<u>Summer Semester</u>		<u>Credits</u>
ATOE-2640	Advanced Grader Practice	3
ATOE-2660	Grader Safety	2
ATOE-xxxx	ATOE elective course	1 - 3
		6 - 8

PROGRAM TOTAL 30 - 34

APPLIED INDUSTRIAL TECHNOLOGY (Painting)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Painting

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Painter, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Painters prepare surfaces of buildings and other structures and then apply paint and other compounds by means of brushes, rollers and sprayers. Painters apply a variety of substances including varnish, lacquers and enamels to interior surfaces and exterior structures. They may also work with wallpaper, vinyl and other materials, as well as mix paints, sandblast and waterblast.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- High School Diploma/GED
- COMPASS score: eligibility at or above ENG-1000
- COMPASS score: eligibility at or above MATH-1000
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Perform professional craftsmen skills to properly apply a variety of paints, wall coverings, stains and faux finishes required to complete a job in an efficient and aesthetic manner.
7. Use appropriate personal protective equipment and fall protection to ensure a safe work environment.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATPT-1330	Filling Compounds and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
BADM-xxxx	Business Elective ... OR	3
CNST-1xxx	CNST elective ... OR	
ACCT-1011	Business Math Applications	
MATH-1xxx	1000-level MATH course or higher	3
		18

<u>Second Semester</u>		<u>Credits</u>
ATPT-1620	Wood Finishing	2
ATPT-1630	Color Mixing and Matching	2
ATPT-1640	Rigging and Hoisting	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-1660	Labor in American Society	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		16

<u>Third Semester</u>		<u>Credits</u>
ATGL-2400	Advanced Rigging and Hoisting ... OR	2
ATPT-2370	Abrasive Blasting Techniques ¹ ... OR	-
ATPT-2380	Special Coatings and Decorative Finishes	
ATPT-2320	Safe Work Practices	3
ATPT-2330	Spray and Industrial Painting	2
FIN-1061	Personal Finance ... OR	2-3
CNST-1730	Construction Print Reading ... OR	
BADM-xxxx	Business Elective	
Arts & Hum	(see AAB/AAS degree requirements)	3
		12 - 13

<u>Fourth Semester</u>		<u>Credits</u>
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2350	Advanced Spray and Industrial Painting	2
ATPT-2360	Foreman Training	2
AIT-2990	Contracting In A Diverse World C	3
BADM-xxxx	Business Elective ... OR	3
CNST-2130	Construction Methods, Materials and Equipment	
	Communication...(See AAS Degree requirements)	3
	Soc & Beh Sci /Sciences (See AAB/AAS degree requirements)	3
		18
PROGRAM TOTAL		64 - 65

¹ATPT-2370 and ATPT-2380 may each be used only once.

C = Capstone course.

Program Sequences

PAINTING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Painters prepare surfaces of buildings and other structures and then apply paint and other compounds by means of brushes, rollers and sprayers. Painters apply a variety of substances including varnish, lacquers and enamels to interior surfaces and exterior structures. They may also work with wallpaper, vinyl and other materials, as well as mix paints, sandblast and waterblast. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Painting.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma / GED
- COMPASS score: eligibility at or above ENG-1000
- COMPASS score: eligibility at or above MATH-1000
- Aptitude Test - contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customers standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Perform professional craftsmen skills to properly apply a variety of paints, wall coverings, stains and faux finishes required to complete a job in an efficient and aesthetic manner.
7. Use appropriate personal protective equipment and fall protection to ensure a safe work environment.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATPT-1330	Filling Compounds and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ATPT-1620	Wood Finishing	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
		13
<u>Second Semester</u>		<u>Credits</u>
ATGL-2400	Advanced Rigging and Hoisting	2
ATPT-1640	Rigging and Hoisting	2
ATPT-1660	Labor in American Society	2
ATPT-2320	Safe Work Practices	3
ATPT-2330	Spray and Industrial Painting	2
ATPT-2370	Abrasive Blasting Techniques	2
ATPT-2380	Special Coatings and Decorative Finishes	2
		15
<u>Summer Semester</u>		<u>Credits</u>
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2350	Advanced Spray and Industrial Painting	2
ATPT-2360	Foreman Training	2
		6
	PROGRAM TOTAL	34

APPLIED INDUSTRIAL TECHNOLOGY (Pile Driving)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Pile Driving

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Pile Driving, as well as an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Pile Driving is the art of driving down piles with rigs that are large machines that resemble cranes. Work can include driving concrete and metal piling as part of a foundation system, or driving wood and concrete piling to support docks and bridges. Pile Drivers can also be found on offshore oil rigs and as commercial divers in underwater construction.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma / GED
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Use cranes, vibrating hammers and drilling rigs to drive and secure various types of piling to develop foundations for bridges and commercial buildings.
9. Use appropriate equipment, sheeting and lagging in order to build permanent and temporary retaining walls for a variety of construction projects.
10. Setup and use crane(s) to support the equipment and drive various types of piling.
11. Be certified in rigging and welding.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATCT-1301	Introduction to Carpentry	2
ATCT-1310	Carpentry Safety	2
ATMW-1340	Introduction to Pile Driving	2
ATPD-1330	Print Reading for Pile Driving	2
CNST-1281	Construction Engineering Orientation	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		17

<u>Second Semester</u>		<u>Credits</u>
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
ATPD-1310	Technical Measurements, Hand & Power Tool Use in Pile Driving	2
ATPD-1370	Pile Driving on Land and Water	2
CNST-1510	Green Building & Sustainability I	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Arts & Hum	(see AAB/AAS degree requirements)	3
		17

<u>Third Semester</u>		<u>Credits</u>
ATPD-2020	Pile Driving Technologies	2
ATPD-2220	False Work and Heavy Timber	2
ATPD-2370	Advanced Pile Driving on Land	2
ATMW-2230	Millwright Pile Driver Weld II	2
CNST-1730	Construction Print Reading	2
Communication...	(See AAS Degree requirements) ¹	3
Soc & Beh Sci/Sciences	(see AAB/AAS Degree Requirements)	3
		16

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATMW-2520	Millwright Pile Driver Weld III	2
ATPD-2380	Advanced Pile Driving on Water	2
ATPD-2700	Millwright-Pile Driver Weld IV	2
ATPD-2710	Millwright-Piledriver Weld V	2
CNST-2130	Construction Methods, Materials and Equipment	3
CNST-2990	Construction Estimating & Cost Analysis	3
		17
PROGRAM TOTAL		67

¹ENG 2151 highly recommended.

C = Capstone course.

Program Sequences

PILE DRIVING

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Pile Driving is the art of driving down piles with rigs that are large machines that resemble cranes. Work can include driving concrete and metal piling as part of a foundation system, or driving wood and concrete piling to support docks and bridges. Pile Drivers can also be found on offshore oil rigs and as commercial divers in underwater construction. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Pile Driving.

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.
2. Work independently and in a team environment to accomplish the job in a timely and professional manner.
3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.
4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.
5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.
6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.
7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.
8. Use cranes, vibrating hammers and drilling rigs to drive and secure various types of piling to develop foundations for bridges and commercial buildings.
9. Use appropriate equipment, sheeting and lagging in order to build permanent and temporary retaining walls for a variety of construction projects.
10. Setup and use crane(s) to support the equipment and drive various types of piling.
11. Be certified in rigging and welding.

Apprenticeship Coordinator - 216-987-3295

	Suggested Semester Sequence	Credits
<u>First Semester</u>		
ATCT-1301	Introduction to Carpentry	2
ATCT-1310	Carpentry Safety	2
ATMW-1340	Introduction to Pile Driving	2
ATMW-1450	Heavy Rigging	2

ATMW-1490	Millwright Pile Driver Weld I	2
ATPD-1330	Print Reading for Pile Driving	2
		12

<u>Second Semester</u>		<u>Credits</u>
ATMW-2230	Millwright Pile Driver Weld II	2
ATPD-1310	Technical Measurements, Hand & Power Tool Use in Pile Driving	2
ATPD-1370	Pile Driving on Land and Water	2
ATPD-2020	Pile Driving Technologies	2
ATPD-2220	False Work and Heavy Timber	2
ATPD-2370	Advanced Pile Driving on Land	2
ATPD-2380	Advanced Pile Driving on Water	2
		14

<u>Summer Semester</u>		<u>Credits</u>
ATMW-2520	Millwright Pile Driver Weld III ¹	2
ATPD-2700	Millwright-Pile Driver Weld IV ¹	2
ATPD-2710	Millwright-Piledriver Weld V ¹	2
		6

PROGRAM TOTAL 32

¹Consecutively scheduled courses.

APPLIED INDUSTRIAL TECHNOLOGY (Pipefitting)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Pipefitting

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. A pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma /GED

(continued on next page)

**APPLIED INDUSTRIAL TECHNOLOGY
(Pipefitting) (Continued)**

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimize waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, and refrigeration systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the pipe fitting industry.

Suggested Semester Sequence

<u>First Semester</u>	<u>Credits</u>
ATPL-1000 Care and Use of Tools	2
ATPF-1210 Rigging	2
ATCM-1340 OSHA Standards for the Construction Industry	3
MATH-1xxx 1000-level MATH course or higher	3
ENG-1010 College Composition I ... OR	3
ENG-101H Honors College Composition I	
BADM-xxxx Business Elective ... OR	3
CNST-xxxx CNST Elective	-
	16

<u>Second Semester</u>	<u>Credits</u>
ATPF-1220 Basic Pipefitting Layout	1
ATPF-1270 Sprinkler Drawings	4
BADM-xxxx Business Elective ... OR	3
CNST-xxxx CNST Elective ... OR	
FIN-1061 Personal Finance	
IT-1010 Introduction to Microcomputer Applications ... OR	3
IT-101H Honors Introduction to Microcomputer Applications	
Communication...(See AAS Degree requirements)	3
	14

<u>Third Semester</u>	<u>Credits</u>
ATPF-1360 Hydronic Heating and Cooling	2
ATPL-2510 Pumps	2
ATPF-xxxx Elective	1
BADM-xxxx Business Elective ... OR	3
CNST-1730 Construction Print Reading	2
Natural Science (lecture)	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)	3
	13 - 14

<u>Fourth Semester</u>	<u>Credits</u>
ATPF-2340 Steam Systems	2
ATPF-xxxx Elective	1
ATPF-xxxx Pipefitter Elective	2
BADM-2xxx 2000 level Business Elective ... OR	3
CNST-2130 Construction Methods, Materials and Equipment	-
	8

<u>Summer Semester</u>	<u>Credits</u>
AIT-2990 Contracting In A Diverse World	3
ATPF-2510 Sprinkler Fire Protection	2
ATPF-xxxx Pipefitter Elective	2
ATPL-2560 Foreman Certification	2
	9
PROGRAM TOTAL	60 - 61

<u>Electives</u>	<u>Credits</u>
BADM-1020 Introduction to Business	3
BADM-1121 Principles of Management & Organizational Behavior	4
BADM-1210 Labor-Management Relations	3
BADM-1300 Small Business Management	4
BADM-2150 Business Law	4
BADM-2450 New Business Development	5
BADM-2470 Marketing Techniques for Small Business	3
CNST 1281 Construction Engineering Orientation	3
CNST 1510 Green Building & Sustainability I	3
CNST 1730 Construction Print Reading	2
CNST 2130 Construction Methods, Materials and Equipment	3
FIN 1061 Personal Finance	3

PIPEFITTING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. A pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma /GED

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.

8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, refrigeration systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the pipe fitting industry.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATPL-1000	Care and Use of Tools	2
ATPF-1070	Soldering Brazing and Pipefitting Tools	2
ATCM-1340	OSHA Standards for the Construction Industry	3
ATPF-1210	Rigging	2
ATPF-1220	Basic Pipefitting Layout	1
ATPF-1270	Sprinkler Drawings	<u>4</u>
		14
<u>Second Semester</u>		
		<u>Credits</u>
ATPF-1360	Hydronic Heating and Cooling	2
ATPF-2510	Sprinkler Fire Protection	2
ATPF-2340	Steam Systems	2
ATPF-xxxx	Elective	1
ATPF-xxxx	Elective	1
ATPF-xxxx	Pipefitter Elective	<u>2</u>
		10
<u>Summer Semester</u>		
		<u>Credits</u>
ATPL-2510	Pumps	2
ATPL-2560	Foreman Certification	2
ATPF-xxxx	Pipefitter Elective	<u>2</u>
		6
	PROGRAM TOTAL	30

Student must complete apprenticeship and be eligible for journey certification to receive Certificate of Proficiency

APPLIED INDUSTRIAL TECHNOLOGY (Plumbing)

Associate of Applied Science in Applied Industrial Technology with a concentration in Plumbing

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice will learn to install, repair, maintain and service piping systems, plumbing systems and equipment used for drinking (potable) water distribution, sanitary storm water systems and waste disposal. Additional opportunities for plumbers can include technical installations for Medical Gas, Hydronic in-floor heating, Solar Panels, Heat Pumps, Cross-Connection Control and many other systems necessary for the health and safety of the general public.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma /GED

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test Potable Water, Storm/Sanitary Drainage, Fuel Gas and Medical Gases Systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the plumbing industry.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATPL-1000	Care and Use of Tools ¹	2
ATPL-1010	Soldering and Brazing ¹	2
ATPL-1040	Plumbing Heritage	2
ATPL-1070	Pipe Fittings, Valves, and Supports	2
MATH-1xxx	1000-level MATH course or higher	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	-
		14
<u>Second Semester</u>		
ATCM-2320	Blueprint Fundamentals-Construction	2
ATPL-1030	State of Ohio Plumbing Code I	2
CNST-1730	Construction Print Reading ... OR	2
BADM-xxxx	Business Elective	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		12 - 13
<u>Third Semester</u>		
ATPL-1210	State of Ohio Plumbing Code II	2
ATPL-1220	Gas Systems	2
ATPL-1230	Water supply	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective ... OR	
FIN-1061	Personal Finance	
ENG-2151	Technical Writing	3
	Natural Sciences Requirement (see AAB/AAS requirements)	3
		15
<u>Fourth Semester</u>		
AIT-2990	Contracting In A Diverse World C	3
ATPL-2320	State of Ohio Plumbing Code III	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPL-2350	Electricity for Plumbers	2
BADM-xxxx	Business Elective ... OR	3
CNST-2130	Construction Methods, Materials and Equipment	3
	Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)	3
		15
<u>Summer Semester</u>		
ATPL-1060	Medical Gas	2
ATPL-2410	City and State Backflow Certification	2
ATPL-2430	Trench and Excavation Safety/Confined Space	1
ATPL-2440	City of Cleveland Plumbing License	1
		6
	PROGRAM TOTAL	62 - 63

¹Apprentice may be awarded credit from JATC for life experience

C = Capstone course.

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Plumbing) (Continued)

ELECTIVES Select from the following courses to meet 12 credit elective requirements.

<u>Business Electives</u>		<u>Credits</u>
BADM 1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM 1300	Small Business Management	4
BADM 2150	Business Law	4
BADM 2450	New Business Development	5
BADM 2470	Marketing Techniques for Small Business	3
		12
<u>Construction Management Sequence</u>		<u>Credits</u>
CNST sequence		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
		11

PLUMBING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Student must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing. A five-year apprenticeship emphasizes the skill set required to be a journey-level Plumber. The Certificate of Proficiency provides academic recognition of the accomplishment of the journey-level worker. An apprentice will learn to install, repair, maintain and service piping systems, plumbing systems and equipment used for drinking (potable) water distribution, sanitary storm water systems and waste disposal. Additional opportunities for plumbers can include technical installations for Medical Gas, Hydronic in-floor heating, Solar Panels, Heat Pumps, Cross-Connection Control and many other systems necessary for the health and safety of the general public.

Apprenticeship Coordinator - 216-987-3195

Program Admission Requirements:

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma /GED

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
- Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.

- Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
- Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
- Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.
- Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.
- Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
- Apply knowledge of advance math to install, repair and test Potable Water, Storm/Sanitary Drainage, Fuel Gas and Medical Gases Systems according to national, state, local and other applicable industry codes and standards.
- Obtain all required certifications in the plumbing industry.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATPL-1000	Care and Use of Tools ¹	2
ATPL-1010	Soldering and Brazing ¹	2
ATPL-1040	Plumbing Heritage	2
ATPL-1070	Pipe Fittings, Valves, and Supports	2
ATPL-1030	State of Ohio Plumbing Code I	2
		10

<u>Second Semester</u>		<u>Credits</u>
ATCM-2320	Blueprint Fundamentals-Construction	2
ATPL-1210	State of Ohio Plumbing Code II	2
ATPL-1220	Gas Systems	2
ATPL-1230	Water supply	2
ATPL-2320	State of Ohio Plumbing Code III	2
ATPL-2350	Electricity for Plumbers	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
		14

<u>Summer Semester</u>		<u>Credits</u>
ATPL-1060	Medical Gas	2
ATPL-2410	City and State Backflow Certification	2
ATPL-2430	Trench and Excavation Safety/Confined Space	1
ATPL-2440	City of Cleveland Plumbing License	1
		6

PROGRAM TOTAL 30

¹Apprentice may be awarded credit from JATC for life experience.

APPLIED INDUSTRIAL TECHNOLOGY (Sheet Metal Working)

Associate of Applied Science in Applied Industrial Technology with a concentration in Sheet Metal Working

Students must be working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship and Training. The 5 year apprenticeship program provides training toward journey level certification and the technical component of the Associate of Applied Science degree. Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems; roofs; siding; rain gutters; downspouts; skylights; restaurant equipment; outdoor signs; railroad cars; tailgates; customized precision equipment; and many other products made from metal sheets. They also may work with fiberglass and plastic materials.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:

- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma /GED

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing using appropriate technology with co-workers, other trades, design professionals, suppliers and end users in order to complete projects in a timely fashion in accordance with local codes and job specifications.
2. Working independently or as part of a team in a respectful and professional manner, resolving conflicts when needed, in order to complete a project in a timely fashion.
3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.
4. Recognize hazardous materials and conditions, wear appropriate personal protective equipment and take preventative measures following federal, state, local laws, policies and procedures.
5. Layout and fabricate sheet metal items safely using shop equipment, hand and power tools, computerized equipment and apply basic math to meet job specifications in accordance with Sheet Metal Air Condition Contractors National Association (SMACNA).
6. Install sheet metal items safely using hand and power tools, ladders, scaffolds and lifting devices, and apply basic math to meet job specifications in accordance with SMACNA standards.
7. Read and interpret blueprints, specifications and shop drawing in order to fabricate and install various sheet metal components.
8. Startup HVAC equipment and service accordingly to meet project specification.
9. Safely test and balance an installed system to ensure that it is operating to design specifications.

10. Be certified in OSHA 10 and OSHA 30 Construction Safety and Health. Be prepared for the following certifications:
 - a. EPA Section 608 Certification
 - b. AWS D1.1 and AWS D1.9 Welding Certifications
 - c. HVAC Firelife Safety Level 1 Technician Certification

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATSM-1010	Benefits Management	1
ATSM-1020	Trade History	1
ATSM-1030	Layout and Fabrication I	2
ATSM-1040	OSHA 16 Hour Safety Training	1
ATGL-1630	Basic Welding	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	-
		16
<u>Second Semester</u>		
ATSM-1220	Layout and Fabrication II	2
ATSM-1230	Field Installation	3
ATSM-2310	Refrigeration I	1
ATGL-2340	Advanced Welding	2
ATPL-2350	Electricity for Plumbers	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	-
MATH-1xxx	1000-level MATH course or higher	3
		16
<u>Third Semester</u>		
ATSM-2330	Layout and Fabrication III	3
ATSM-2340	Advanced Field Installation	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	-
Arts & Hum	(see AAB/AAS degree requirements)	3
Soc & Beh Sci	(See AAB/AAS degree requirements)	3
		15
<u>Fourth Semester</u>		
AIT-2990	Contracting In A Diverse World C	3
ATCM-1340	OSHA Standards for the Construction Industry	3
ATSM-2420	Refrigeration II	2
ATSM-2510	Commercial Roof Top Units	2
BADM-xxxx	Business Elective ... OR	3 - 4
CNST-xxxx	CNST Elective	-
Communication...	(See AAS Degree requirements)	3
		16 - 17
	PROGRAM TOTAL	63 - 64
C = Capstone course.		
<u>ELECTIVES</u>		
<u>Construction Management Electives</u>		
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
CNST 2631	Construction Management Systems	3
CNST 2990	Construction Estimating & Cost Analysis	3

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Sheet Metal Working) (Continued)

<u>Business & Supervision Electives</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-2150	Business Law	4
BADM-2240	Negotiations	3

<u>Entrepreneur Electives</u>		<u>Credits</u>
BADM-1300	Small Business Management	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

SHEET METAL WORKING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship and Training. The 5 year apprenticeship program provides training toward journey level certification and the technical component toward the Associate of Applied Science degree with a concentration in Sheetmetal Working. Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems; roofs; siding; rain gutters; downspouts; skylights; restaurant equipment; outdoor signs; railroad cars; tailgates; customized precision equipment; and many other products made from metal sheets. They also may work with fiberglass and plastic materials.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Communicate verbally, nonverbally and in writing using appropriate technology with co-workers, other trades, design professionals, suppliers and end users in order to complete projects in a timely fashion in accordance with local codes and job specifications.
- Working independently or as part of a team in a respectful and professional manner, resolving conflicts when needed, in order to complete a project in a timely fashion.
- Exhibit pride of craftsmanship, reliability and actively engage in all aspects of the project and take opportunities to upgrade skills.
- Recognize hazardous materials and conditions, wear appropriate personal protective equipment and take preventative measures following federal, state, local laws, policies and procedures.

- Layout and fabricate sheet metal items safely using shop equipment, hand and power tools, and computerized equipment and apply basic math to meet job specifications in accordance with Sheet Metal Air Condition Contractors National Association (SMACNA).
- Install sheet metal items safely using hand and power tools, ladders, scaffolds and lifting devices, and applying basic math to meet job specifications in accordance with SMACNA standards.
- Read and interpret blueprints, specifications and shop drawing in order to fabricate and install various sheet metal components.
- Startup HVAC equipment and service accordingly to meet project specification.
- Safely test and balance an installed system to ensure that it is operating to design specifications.
- Be certified in OSHA 10 and OSHA 30 Construction Safety and Health. Be prepared for the following certifications:
 - EPA Section 608 Certification
 - AWSD1.1 and AWSD1.9 Welding Certifications
 - HVAC Firelife Safety Level1 Technician Certification

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ATGL-1630	Basic Welding	2
ATSM-1010	Benefits Management	1
ATSM-1020	Trade History	1
ATSM-1030	Layout and Fabrication I	2
ATSM-1040	OSHA 16 Hour Safety Training	1
ATSM-1230	Field Installation	3
ATSM-2310	Refrigeration I	1
ATSM-xxxx	Sheetmetal Working elective	<u>2</u>
		13

<u>Second Semester</u>		<u>Credits</u>
ATCM-1340	OSHA Standards for the Construction Industry	3
ATGL-2340	Advanced Welding	2
ATPL-2350	Electricity for Plumbers	2
ATSM-1220	Layout and Fabrication II ¹	2
ATSM-2330	Layout and Fabrication III ¹	3
ATSM-2340	Advanced Field Installation	3
ATSM-2420	Refrigeration II	<u>2</u>
		17

PROGRAM TOTAL

30

¹Consecutively scheduled courses.

APPLIED INDUSTRIAL TECHNOLOGY (Sign and Display)

This program is currently on hold. Students interested in this area may apply to the Painter's Apprenticeship Program.

APPLIED INDUSTRIAL TECHNOLOGY (Teledata)

This program is currently on hold and not accepting any students.

AUTOMOTIVE TECHNOLOGY

Associate of Applied Science degree in Automotive Technology

Students are taught to diagnose, correct and repair electrical, fuel, emissions and mechanical problems found in today's modern automobile through classroom, laboratory and field experience. Graduates are prepared for entry level positions as technicians in fleet service, manufacturer's dealerships, national oil company and transmission repair facilities or independent garages. Course work prepares student for the National Institute for Automotive Service Excellence (ASE) automotive tech tests. The AUTO Program is certified by the National Automotive Technicians Education Foundation (NATEF) in all eight ASE categories. The Automotive Service Educational Program (ASEP) requires alternating school and General Motors dealership work experience sessions. In addition, ASEP students need to complete AUTO-1950 and AUTO-1960. Please call the Automotive Technology department for more information.

Program Manager - 216-987-5330

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Dealership sponsor required for ASEP program
- ASEP student handbooks contain educational and worksite requirements for continuation in program

Other Information:

- ASEP students need to complete five field experience credits: AUTO-1940, AUTO-1950, AUTO-1960, AUTO-2940, and AUTO-2950.
- Enrollment in individual courses for students who are not degree majors is permitted.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently and professionally and as a member of an automotive team.
3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.
4. Assist in diagnosis and perform mechanical repairs using appropriate tools and equipment according to industry standards in a safe manner.
5. Diagnose and perform complex mechanical and electrical repairs using appropriate tools and equipment according to industry standards in a safe manner.
6. Apply basic business and management practices (marketing, inventory control, accounting, customer relations, employee relations) to the automotive environment.
7. Identify, interpret and document customer concerns and determine necessary actions. Listen and respectfully communicate with customers, co-workers and managers.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
AUTO-1010	Shop Safety and Lab Procedures	1
AUTO-1050	Numerical Applications in Automotive Service	3
AUTO-1100	Introduction to Automotive Service Procedures	2
AUTO-1350	Manual Transmission and Drivetrain	2
AUTO-1501	Automotive Electrical Fundamentals	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		16
<u>Second Semester</u>		
AUTO-1300	Automotive Engines	3
AUTO-1400	Automotive Alignment, Steering and Suspension	3
AUTO-1450	Automotive Braking Systems	3
AUTO-1940	Automotive Field Experience I	1
MATH-1xxx	1000-level MATH course or higher	3
Arts & Hum	(see AAB/AAS degree requirements)	<u>3</u>
		16
<u>Third Semester</u>		
AUTO-2350	Automotive HVAC	2
AUTO-2400	Engine Performance	3
AUTO-2470	Automotive Electrical Systems	2
AUTO-2940	Automotive Field Experience IV	1
BADM-1020	Introduction to Business	3
ECON-1210	Survey of Economics	3
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	-
		17
<u>Fourth Semester</u>		
AUTO-2300	Automatic Transmissions ... OR	3
AUTO-2600	Hybrids and Alternative Fuel Systems ... OR	
AUTO-2650	Hybrid Vehicle Safety and Service	
AUTO-2450	Automotive Electronic Engine Controls	3
AUTO-2500	Automotive Electrical Diagnosis	2
AUTO-2701	Automotive Service Operations	3
AUTO-2950	Automotive Field Experience V C ³	1
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	<u>3</u>
		15
	PROGRAM TOTAL	64

³ASEP Students must also complete AUTO-1950 & 1960.

C = Capstone course.

AUTOMOTIVE TECHNOLOGY

Certificate of Proficiency

This Certificate of Proficiency in Automotive Technology provides students with classroom and laboratory experience and prepares students for employment in the auto service industry.

Degree: Students may apply credits toward the Automotive Technology Degree program

Program Admission Requirements:

- High School Diploma/GED highly recommended, but not required
- Contact the Automotive Technology department at 216-987-5330.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently and professionally and as a member of an automotive team.
3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.
4. Assist in diagnosis and perform mechanical repairs using appropriate tools and equipment according to industry standards in a safe manner.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
AUTO-1010	Shop Safety and Lab Procedures	1
AUTO-1050	Numerical Applications in Automotive Service	3
AUTO-1100	Introduction to Automotive Service Procedures	2
AUTO-1350	Manual Transmission and Drivetrain	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		14
<u>Second Semester</u>		<u>Credits</u>
AUTO-1300	Automotive Engines	3
AUTO-1400	Automotive Alignment, Steering and Suspension	3
AUTO-1450	Automotive Braking Systems	3
AUTO-1501	Automotive Electrical Fundamentals	2
BADM-1020	Introduction to Business	3
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	-
		17
	PROGRAM TOTAL	31

AUTOMOTIVE MAINTENANCE AND GENERAL SERVICE

Short-Term Certificate

The Short-Term Certificate in Automotive Maintenance and General Service prepares students for entry level positions in the auto service industry as assistant technicians, maintenance technicians or general service technicians. Training is provided through a combination of classroom instruction and laboratory experience.

Program Manager - 216-987-5330

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently and professionally and as a member of an automotive team.
3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
AUTO-1100	Introduction to Automotive Service Procedures	2
AUTO-1400	Automotive Alignment, Steering and Suspension	3
AUTO-1450	Automotive Braking Systems	3
AUTO-1501	Automotive Electrical Fundamentals	2
		10
	PROGRAM TOTAL	10

BUSINESS MANAGEMENT

Associate of Applied Business degree in Business Management

The Associate of Applied Business Degree in Business Management is designed to help you become an effective manager of projects as well as personnel. The business management curriculum will enable you to advance personally in a business environment while you contribute to your company's goals and objectives. Your courses will familiarize you with general management theory and practice, as well as critical knowledge in accounting, marketing, purchasing, economic and legal aspects of the modern business world. Prepare yourself for a business related career or advancement in industrial or consumer product or retail setting.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening, non-verbal, written, and verbal communication skills, utilizing appropriate technology with internal and external customers, to meet the organizations objectives.
2. Develop and maintain effective working relationships within a team or organization among diverse people.
3. Provide quality and timely customer service that ensures customer satisfaction to both internal and external customers.
4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, and time management to meet or exceed the organization's objectives.
5. Use various systems and software to maximize the efficiency of the organization.
6. Use problem solving tools and principles of quality to identify and enhance an organization's performance.
7. Apply general math and accounting skills to prepare, record, and track revenue and expenditures and other performance measures.
8. Apply basic knowledge of business principles and practices to achieve competitive advantage in the global marketplace.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher ¹	<u>4</u> 13
<u>Second Semester</u>		
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior	4
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	— 15
<u>Third Semester</u>		
BADM-1210	Labor-Management Relations	3
BADM-2010	Business Communications ...OR	3
BADM-201H	Honors Business Communications	
BADM-2160	Introduction to Purchasing	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	<u>3</u> 16
<u>Fourth Semester</u>		
BADM-2110	Production/Operations Management	3
BADM-2150	Business Law	4
BADM-2330	Human Resource Management	3
BADM-2501	Business Strategies C	3
PHIL-2060	Business Ethics	<u>3</u> 16
PROGRAM TOTAL		60

¹MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher is recommended for students planning to transfer.

C = Capstone course.

**BUSINESS MANAGEMENT
(Human Resources Management)**

Associate of Applied Business degree in Business Management with a concentration in Human Resources

Students experience and develop Human Resource generalist capabilities through this competency-driven and applications-based Human Resource program. By combining a dynamic market designed and driven Human Resource concentration with a well-rounded Business Management degree, the student is preparing to become a marketable Human Resource practitioner with a business partner orientation. Those already in the function can develop and advance their career potential through this up-to-date program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ability to work with a computer and operating systems, such as Windows and Microsoft Office (Word, Excel, PowerPoint, Access).
2. Apply an effective written and verbal communication strategy to meet the organization's objectives.
3. Effectively utilize personal management skills such as organization, leadership, professionalism, time management and ethics.
4. Apply general math skills to perform basic organizational ratios (return on investments, sales per employee, profit per employee, debt/equity) and understand measures and importance of positive returns.
5. Develop effective working relationships within a team or organization among diverse people.
6. Apply basic knowledge of business and economic principles and structures to achieve competitive advantage in a global marketplace in a socially responsible manner.
7. Apply basic employment law to accomplish business objectives and remain in compliance with all applicable laws.
8. Consider the differences in employee relations in a non-union vs. union environment when advancing human resource concepts/procedures such as hiring, performance management, discipline, termination, training and safety.
9. Apply general human resource knowledge in areas such as strategic planning, leadership, record keeping, and health and safety to drive organizational performance.
10. Identify core competent skills needed to develop a strong, competitive organization through people.
11. Administer the benefit and compensation system conforming to current laws, regulations, and marketplace.
12. Maintain staffing by effectively sourcing, recruiting and selecting qualified candidates for open positions in order to meet required standards.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher ¹	4
SPCH-1010	Fundamentals of Speech Communication	<u>3</u>
		16
<u>Second Semester</u>		
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior	4
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	-
		15
<u>Third Semester</u>		
BADM-1210	Labor-Management Relations	3
BADM-2330	Human Resource Management	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
PSY-1050	Introduction to Industrial/Organizational Psychology	<u>3</u>
		16
<u>Fourth Semester</u>		
BADM-2110	Production/Operations Management	3
BADM-2150	Business Law	4
BADM-2340	Human Resource Law and Application	3
BADM-2390	Advanced Human Resource Practices C	3
PL-1460	Workers' Compensation Law	<u>3</u>
		16
	PROGRAM TOTAL	63

¹MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher recommended for students planning to transfer.

C = Capstone course.

BUSINESS MANAGEMENT (International Business)

Associate of Applied Business degree in Business Management with a concentration in International Business

Designed to prepare students for the unique requirements of doing business in a global marketplace. Includes export activities, global business and marketing strategies, foreign manufacturing logistics and international communications etiquette. Courses are taught by experts in International Business and feature guest lecturers, interactive role play and plenty of hands-on activities. Maximizes student opportunities for employment in any aspect of business in the U.S. or elsewhere.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening, verbal, non-verbal, written, and appropriate cross-cultural communication skills, utilizing appropriate technology with internal and external stakeholders, to meet a global organization's objectives.
2. Apply intercultural sensitivity and knowledge of global business practices and protocols to develop and maintain effective working relationships among diverse people.
3. Provide quality and timely customer service that ensures customer satisfaction to both internal and external customers.
4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, networking and time management to meet or exceed an organization's global objectives.
5. Use various international systems, certification, standards, and software to maximize the efficiency of the global trade environment.
6. Identify and use problem solving tools and principles of quality to identify and resolve problems in a timely manner that enhances a global organization's performance on a global scale.
7. Apply general math, metric, currency and accounting skills to prepare, record and track revenue and expenditures and other performance measures in a global environment.
8. Apply knowledge of global concepts including geography, current affairs, history, travel and infrastructures to assist an organization's international strategy.
9. Conduct market research to support an organization's global marketing programs/initiatives.
10. Support management of an organization's transportation, warehouse, distribution and logistics operations.
11. Apply knowledge of international financial management to support purchasing/sales products and services.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
BADM-1020	Introduction to Business	3
BADM-2160	Introduction to Purchasing	3
ECON-2620	Principles of Microeconomics	4
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		16
<u>Second Semester</u>		
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior ... OR	3-4
BADM-2110	Production/Operations Management	
MARK-2010	Principles of Marketing	3
MATH-1250	Contemporary Mathematics or higher ¹	<u>4</u>
		14 - 15
<u>Third Semester</u>		
ACCT-1340	Managerial Accounting	4
BADM-2600	Introduction to World Trade	3
ECON-2610	Principles of Macroeconomics	4
DEGR-xxxx	Select Foreign Language elective ²	<u>3-4</u>
		14 - 15
<u>Fourth Semester</u>		
BADM-2150	Business Law	4
BADM-2790	International Business Strategy and Application <input type="checkbox"/>	4
BADM-xxxx	Business Elective	3
BADM-xxxx	Business Elective	3
DEGR-xxxx	Select Foreign Language elective	<u>3-4</u>
		17 - 18
	PROGRAM TOTAL	61 - 64

¹MATH-1800-1820 may not be used to meet this requirement; MATH-1270 or higher is recommended for students planning to transfer.

²Foreign language electives should be selected in the same language. Department approval required to select another foreign language. American Sign Language courses are not foreign language elective options for this degree.

= Capstone course.

ELECTIVES

BADM electives

(select a minimum of 6 credits)

BADM 2510	Import/Export Documentation and Transportation	1
BADM 2520	Operational Issues in International Business	2
BADM 2530	International Sourcing and Logistics	2
BADM 2620	International Trade Finance and Insurance	2
BADM 2630	Legal Issues in International Business	1
BADM 2710	Global Marketing	2
BADM 2720	International Market Research	2
BADM 2730	Channels of Distribution in International Markets	1

**BUSINESS MANAGEMENT
(International Business)**

Post-Degree Professional Certificate

The certificate program in international business prepares seasoned professionals and university graduates for the dynamic world of global business. Students learn concepts and practices that prepare them for export operations, sales, distribution, international banking and other aspects of international business. In addition to these critical, "applied skills," students will develop an international perspective and empathy for different cultures. Graduates of this program will be prepared for careers with trading houses, banks, multinational corporations, freight forwarders, transportation companies, governments, international institutions and any firm with a strategic interest in global business. Courses will also prepare the student to sit for the NASBITE National Certification in International Business.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply knowledge of other culture's values, perception, manners and social structures to effectively communicate, work with and negotiate in a global marketplace.
2. Apply knowledge of cultural, ethical, and legal issues in global business management.
3. Develop global business strategies, incorporating and recognizing international environmental factors.
4. Apply and manage international marketing while mixing elements to generate profit.
5. Manage transportation, distribution, and documentation for international sales and shipments.
6. Manage legal entities, foreign exchanges, revenue recognition, and risks and taxes in international finance.
7. Sit for the National Certification in International Business (NMBASBITE).

Suggested Semester Sequence

<u>Summer Session</u>	<u>Credits</u>
BADM-2600 Introduction to World Trade	3
	3
<u>First Semester</u>	<u>Credits</u>
BADM-2160 Introduction to Purchasing	3
BADM-2510 Import/Export Documentation and Transportation	1
BADM-2520 Operational Issues in International Business	2
BADM-2610 Cross Cultural Communications	1
BADM-2630 Legal Issues in International Business	1
BADM-2710 Global Marketing	2
BADM-2720 International Market Research	2
ECON-2620 Principles of Microeconomics	4
	16
<u>Second Semester</u>	<u>Credits</u>
BADM-2530 International Sourcing and Logistics	2
BADM-2620 International Trade Finance and Insurance	2
BADM-2730 Channels of Distribution in International Markets	1
BADM-2790 International Business Strategy and Application	4
MARK-2010 Principles of Marketing	3
	12
PROGRAM TOTAL	31

**BUSINESS MANAGEMENT
(Public Administration)**

Certificate of Proficiency

The Certificate of Proficiency in Public Administration targets a significant and growing market niche. Public Administration has unique characteristics that are significantly different from the Private Sector. With a dwindling tax base and an increasing number of levy defeats, the Public Sector is expected to provide the same level of services with less revenue. The goal of this certificate is to provide the student with the basic foundation skills and knowledge to assist in managing more efficiently, develop independent revenue streams, initiate cost reduction methods and increase tax payers' satisfaction.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening, verbal, non-verbal and written communication skills utilizing appropriate technology with internal and external stakeholders to meet the organization's objectives.
2. Develop and maintain effective working relationships within a team or organization among diverse people.
3. Provide quality and timely customer service that ensures customer satisfaction.
4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, and time management to meet or exceed the organization's objectives.
5. Use various systems and software to maximize the efficiency of the organization.
6. Use problem solving tools and principles of quality to identify and enhance an organization's performance.
7. Apply general math and accounting skills to prepare, record, and track revenue and expenditures and other performance measures.
8. Apply basic knowledge of business principles and practices to achieve competitive advantage in the global marketplace.
9. Apply knowledge of various governmental subdivisions to provide effective and efficient service delivery that meets all applicable laws and policies and regulations of the agency.

Suggested Semester Sequence

<u>First Semester</u>	<u>Credits</u>
ACCT-1310 Financial Accounting	4
BADM-1020 Introduction to Business	3
ENG-1010 College Composition I ... OR	3
ENG-101H Honors College Composition I	
IT-1010 Introduction to Microcomputer Applications ... OR	3
IT-101H Honors Introduction to Microcomputer Applications	
POL-1020 State and Local Government	3
	16

(continued on next page)

BUSINESS MANAGEMENT (Public Administration) (Continued)

<u>Second Semester</u>		<u>Credits</u>
ACCT-2500	Government/Non-Profit Accounting... OR	4
HS-2530	Proposal Writing and Program Development	
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2400	Public Administration	3
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications ... OR	
BADM-2160	Introduction to Purchasing ... OR	
BADM-2330	Human Resource Management	
MARK-2010	Principles of Marketing	<u>3</u>
		15-17
PROGRAM TOTAL		31-33

BUSINESS MANAGEMENT (Small Business Management)

Associate of Applied Business degree in Business Management with a concentration in Small Business Management

This program is designed for those who aspire to be entrepreneurs, as well as for those already operating a small business. Fundamentals of entrepreneurship are emphasized. A solid management foundation is provided.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Raise capital, effectively manage financial resources, and develop policies and procedures to ensure financial goals are met.
2. Communicate verbally and in writing to produce letters, proposals and e-mails to clients, colleagues and other professionals.
3. Develop and create a human resource culture that protects the overall integrity of the organization through consistent practices that influence the human aspect of operating a business.
4. Develop a clear understanding of various business legal implications to better protect the company's physical and intellectual properties.
5. Develop a clearly written document that articulates/identifies the short and long term direction of the company with the primary purpose of sustaining its future growth.
6. Identify roles, goals, procedures and relationships for the purpose of organizational efficiency.
7. Commit to self-development and life-long learning in all facets of starting and operating an entrepreneurial enterprise such as time management, continuing education and balancing business and personal life.
8. Move product or service by creating, developing and recognizing your unique selling point.
9. Perform and interpret market research to determine the demand and feasibility for product or service.
10. Identify and develop flowchart (process) to move sales order to fulfillment within organizational capacity.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher ¹	4
SPCH-1010	Fundamentals of Speech Communication	<u>3</u>
		16
<u>Second Semester</u>		
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior	4
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
		<u>15</u>
<u>Third Semester</u>		
BADM-1300	Small Business Management	4
BADM-2010	Business Communications ...OR	3
BADM-201H	Honors Business Communications	
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	<u>3</u>
		14
<u>Fourth Semester</u>		
BADM-2150	Business Law	4
BADM-2450	New Business Development C	5
BADM-2470	Marketing Techniques for Small Business	3
PHIL-2060	Business Ethics	<u>3</u>
		15
PROGRAM TOTAL		60

¹MATH-1800-1819/2800-2819 & 1820/2820 may not be used to meet this requirement. MATH-1270 or higher recommended for students planning to transfer.

C = Capstone course.

BUSINESS MANAGEMENT (Strategic Leadership)

Short-Term Certificate

The Leadership Certificate is a structured program that is designed to provide a coherent selection of courses for the development and growth of leadership skills that can be applied in the students' community and workplace. The certificate program provides a coherent selection of courses for the development of leadership knowledge and skills. Also, the program provides valuable instruction for leaders and potential leaders who are members of neighborhood, civic and community organizations. The strategic leadership certificate focuses on increasing strategic management skills.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate appropriate and meaningful ideas, information results and feedback to internal/external stakeholders throughout organizational structures using appropriate medium/methodologies.
2. Apply emotional intelligence, problem solving and conflict resolution skills to positively influence business goals and objectives, in a fair and constructive manner, while remaining flexible and being sensitive to cultural and interpersonal differences in a dynamic environment.
3. Employ ethical behavior, strong work ethics and a positive attitude in accordance with organizational standards and policies.
4. Apply business theory, analysis and research for effective decision making.
5. Strategically align resources and inspire and empower others to achieve a shared vision.
6. Utilize strategic thinking, problem solving, planning and organizing skills in order to efficiently direct and control time, material, human and financial resources.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
BADM-1060	Leadership Seminar	1
BADM-1070	Introduction to Project Management	3
BADM-1121	Principles of Management and Organizational Behavior	4
		—
		11
<u>Second Semester</u>		<u>Credits</u>
BADM-2020	Leadership Theory	3
BADM-2030	Management Development	3
BADM-2040	Strategic Leadership ...OR	3
PHIL-2060	Business Ethics	—
		9
	PROGRAM TOTAL	20

CAPTIONING AND COURT REPORTING

Associate of Applied Business degree in Captioning and Court Reporting

Within the legal field, court reporters are entrusted to record everything said in court, at depositions, and in legal meetings. Reporters use computer technology and specialized software in their work today. Thus, "realtime" court reporters now find many applications for their skills outside the legal field in areas such as captioning and computer access real time translations (CART) providing. This program provides the student with skills required to meet the challenges and opportunities available to court reporters in the modern workplace.

Program Admissions Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Recommend students take C&CR-1000 in the spring or summer prior to entering the program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.
2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet) and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.
3. Work independently and apply business procedures to maintain a freelance practice.
4. Write 225 wpm with 95% accuracy and apply real-time technology skills.
5. Effectively apply the use of specialized vocabulary (business, sports, meteorology, politics) as found in current events to capture the spoken word in real time writing.
6. Apply appropriate courtroom procedures to professional work.
7. Maintain a professional appearance and demeanor in a legal setting while adhering to ethical standards and requirements and completing work in a timely manner.
8. Prepared to sit for the Registered Professional Reporter (RPR) Certification Exam.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
C&CR-1000	Introduction to Court Reporting (a) ... OR	1
C&CR-1100	Introduction to Voice Captioning (b)	
C&CR-1300	Realtime Theory I (a) ... OR	4
C&CR-1200	Voicewriting I ¹ (b) ... AND	2
C&CR-1210	Voicewriting II ¹ (b)	2
C&CR-1350	Legal Terminology	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	—
		11

(continued on next page)

CAPTIONING AND COURT REPORTING
(Continued)

<u>Second Semester</u>		<u>Credits</u>
C&CR-1330	Realtime Theory II (a) ... AND	2
C&CR-1340	Realtime Theory III (a) ... OR	2
C&CR-1220	Voicewriting III (b)	4
C&CR-1521	Realtime Theory Reinforcement	2
C&CR-2200	Medical Terminology for Captioning and Court Reporting	3
C&CR-2350	Editing Legal Documents	2
MATH-1xxx	1000-level MATH course or higher	3
		14

<u>Summer Semester</u>		<u>Credits</u>
C&CR-1450	Speedbuilding and Transcription at 140 WPM	2
C&CR-1600	Court Reporting Technology	5
C&CR-1610	Speed Development I	1
C&CR-xxxx	Any C&CR elective course	1
CJ-1120	Criminal Court Procedure	2
		11

<u>Third Semester</u>		<u>Credits</u>
C&CR-1620	Speed Development II	1
C&CR-2300	Court Procedures	3
C&CR-2400	Speedbuilding and Transcription at 180 WPM	2
C&CR-2601	Technical Terminology I ... OR	3
C&CR-2651	Technical Terminology II	3
Arts & Hum	(see AAB/AAS degree requirements)	3
Social & Beh Sci	(See AAB/AAS degree requirements)	3
		15

<u>Fourth Semester</u>		<u>Credits</u>
C&CR-1630	Speed Development III	1
C&CR-2450	Speedbuilding and Transcription at 225 WPM	2
C&CR-2470	Advanced Technology C	3
C&CR-2840	Internship	1
BADM-1300	Small Business Management	4
C&CR-xxxx	Any C&CR elective course	1
Communication...	(See AAB Degree requirements)	3
		15

PROGRAM TOTAL 66

OPTIONS

<u>(a) Court Reporting</u>		<u>Credits</u>
Court Reporting Option teaches students to utilize stenotype machines and software.		
C&CR 1000	Introduction to Court Reporting	1
C&CR 1300	Realtime Theory I	4
C&CR 1330	Realtime Theory II	2
C&CR 1340	Realtime Theory III	2

<u>(b) Voicewriting</u>		<u>Credits</u>
Voicewriting Option teaches students to utilize voice-recognition software and technology. Voicewriting technology enables users to create and edit documents, send email, access the internet and perform other functions in a hands-free environment.		
C&CR 1100	Introduction to Voice Captioning	1
C&CR 1200	Voicewriting I	2
C&CR 1210	Voicewriting II	2
C&CR 1220	Voicewriting III	4

¹Consecutive eight week course.

C = Capstone course.

CAPTIONING AND CART PROVIDING

Short-Term Certificate

Captioners and CART (computer-assisted realtime translation) Providers use steno or voicewriting technology to provide access to the hearing impaired and disabled populations by displaying the text of speakers on computers and television. Graduates can work as an entry-level CART provider or broadcast captioner.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Write three five-minute literary takes at 180 wpm with 96 percent verbatim accuracy.
2. Write three 15-minute Literary broadcast takes at 180 wpm with 96 percent verbatim.
3. Effectively apply the use of dictionary maintenance techniques in the CART and captioning environments.
4. Adhere to ethical standards and requirements while completing work in a timely manner.
5. Utilize CART and captioning equipment for realtime translation.
6. Prepared to sit for the Certified Broadcast Captioner (CBC) certification exam and Certified Cart Provider (CCP) certification exam.

Program Admissions Requirements:

- Completion of the short-term certificate in Court Reporting Technologies or RPR Certification or completion of an entrance examination.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
C&CR-1610	Speed Development I ... OR	1
C&CR-1620	Speed Development II ... OR	
C&CR-1630	Speed Development III	
C&CR-2400	Speedbuilding and Transcription at 180 WPM	2
C&CR-2480	Using Captioning Technology	3
C&CR-2510	CART Production	3
		9

<u>Second Semester</u>		<u>Credits</u>
C&CR-1610	Speed Development I ¹ ... OR	1
C&CR-1620	Speed Development II ... OR	
C&CR-1630	Speed Development III	
C&CR-2450	Speedbuilding and Transcription at 225 WPM	2
C&CR-2520	Captioning Production	3
C&CR-2601	Technical Terminology I	3
C&CR-2651	Technical Terminology II	3
		12

<u>Third Semester</u>		<u>Credits</u>
C&CR-2550	Writing for Captioning and CART	2
C&CR-2910	Internship for Captioning and CART	1
		3

PROGRAM TOTAL 24

¹Must take two different speed development courses to meet program requirements.

COURT REPORTING TECHNOLOGIES

Short-Term Certificate

A student receiving the Short-Term Certificate can work as a scopist or transcriptionist for a court reporting firm, doctor's office, or as an independent contractor.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.
2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet (and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.
3. Work independently and apply business procedures to maintain a freelance practice.
4. Utilize CAT software and knowledge of stenotype to produce transcripts and write at a minimum speed of 140 wpm with 95% accuracy.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
C&CR-1300	Realtime Theory ... OR	2-4
C&CR-1200	Voicewriting I ¹ ... AND	
C&CR-1210	Voicewriting II ¹	
C&CR-1350	Legal Terminology	<u>3</u>
		7

<u>Second Semester</u>		<u>Credits</u>
C&CR-1330	Realtime Theory II ... AND	2-4
C&CR-1340	Realtime Theory III ... OR	
C&CR-1220	Voicewriting III	
C&CR-2350	Editing Legal Documents	<u>2</u>
		6

<u>Third Semester</u>		<u>Credits</u>
C&CR-1450	Speedbuilding and Transcription at 140 WPM ... AND	2
C&CR-1610	Speed Development I ... OR	1
C&CR-1620	Speed Development II ... OR	
C&CR-1630	Speed Development III	
C&CR-1600	Court Reporting Technology	5
C&CR-2200	Medical Terminology for Captioning & Court Reporting	3
		<u>9 - 11</u>

PROGRAM TOTAL 22 - 24

¹Consecutive eight week course.

CONFLICT RESOLUTION AND PEACE STUDIES

Short-Term Certificate

This certificate will provide the student with the theory and skills of conflict resolution and with an opportunity to implement this knowledge in the community.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Analyze and assess conflict in all of its stages and manifestations in order to intervene effectively and ethically to successfully reduce, manage, or resolve conflict.
2. Listen and utilize nonverbal, emotional and cultural/personal perspectives to validate each party's issue/interest, to facilitate de-escalation and engagement to move towards resolution while maintaining a neutral process.
3. Facilitate community building by engaging stakeholder representative through collaboration and teamwork while maintaining a safe and objective environment.
4. Apply problem-solving techniques and knowledge of social/emotional intelligence to analyze and evaluate the roots of conflict, (including structural, cultural, emotional and economical differences), and their effects on individuals to create and sustain a peaceful community.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
POL-1040	Introduction to Peace and Conflict Studies	3
DEGR-xxxx	Select 1 or 2 electives from below list	<u>3 - 6</u>
		9 - 12

<u>Second Semester</u>		<u>Credits</u>
POL-2040	Conflict Resolution Skills	3
DEGR-xxxx	Select 1 or 2 electives from below list	<u>3 - 6</u>
		6 - 9

<u>Summer Semester</u>		<u>Credits</u>
POL-2140	Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning	3
DEGR-xxxx	Select 1 elective from below list	<u>3</u>
		6

PROGRAM TOTAL 21 - 27

ELECTIVES

<u>Electives</u>		<u>Credits</u>
Select from the below list of courses to fulfill elective requirements.		
ANTH-1010	Cultural Anthropology	3
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
HUM-1020	The Individual in Society	3
PHIL-101H	Honors Introduction to Philosophy	3
PHIL-2020	Ethics	3
PHIL-202H	Honors Ethics	3
POL-2050	Study Abroad in Peace and Conflict Resolution	3

(continued on next page)

CONFLICT RESOLUTION AND PEACE STUDIES (Continued)

PSY-1060	Cross-Cultural Competency for Health Care Providers	1
PSY-2020	Life Span Development	4
PSY-202H	Honors Life Span Development	4
PSY-2060	Adolescent Psychology	3
PSY-2100	Introduction to Aging	3
SOC-2010	Social Problems	3
SOC-201H	Honors Social Problems	3
SOC-2550	Race and Ethnic Relations	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
WST-1510	Introduction to Women's Studies	3
WST-151H	Honors Introduction to Women's Studies	3
WST-200H	Honors Women and Reform	3

CONSTRUCTION ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Construction Engineering Technology

This program prepares students for the construction industry with positions in scheduling, estimating, sales & marketing, assistant project management, and assistant field superintendents. The program includes comprehensive study in contract documents, construction materials & methods, scheduling, and estimating for residential and light commercial building. Graduates can be employed with construction contractors, engineering/architectural firms, building material suppliers, public building agencies, or they can transfer into university programs in construction engineering /management.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1280
- Complete the following: CNST-1281, CNST-1730, and IT-1010

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize purpose for building information modeling within building design.
2. Monitor project work for compliance with contract documents.
3. Perform basic surveying tasks including layout of vertical and horizontal alignments, comprehend the underlying mathematical principles and apply the information obtained.
4. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.
5. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract

document tasks, and implement project processes for successful project completion.

6. Use critical path method to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard technology.
7. Apply sound estimating and cost management principles, and use industry standard computer technology to develop and maintain an organized management tool that effectively projects and communicates the project's financial status.
8. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.
9. Use verbal and written skills with technological tools to clearly and effectively communicate, using appropriate protocols to project stakeholders.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
CNST-1281	Construction Engineering Orientation	3
CNST-1730	Construction Print Reading	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
MATH-1280	Advanced Intermediate Algebra ¹	<u>5</u>
		16

<u>Second Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
CNST-1410	Architectural CAD I	3
CNST-2130	Construction Methods, Materials and Equipment	3
MATH-1510	Trigonometry or higher ... OR	3
MATH-151H	Honors Trigonometry	
PHYS-1210	College Physics I	<u>4</u>
		17

<u>Third Semester</u>		<u>Credits</u>
CNST-2110	Basic Survey Practices	3
CNST-2200	Architectural Building Information Modeling	3
CNST-2210	Mechanical & Electrical Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
ENG-2151	Technical Writing	3
MET-1601	Technical Statics	<u>3</u>
		18

<u>Fourth Semester</u>		<u>Credits</u>
CNST-2330	Construction Scheduling C	3
CNST-2410	Principles of Structural Design	3
CNST-2631	Construction Management Systems	3
CNST-xxxx	CNST Elective	3 - 4
	Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)	<u>3</u>
		15 - 16
	PROGRAM TOTAL	66-67

¹MATH-1800-1820 may not be used to meet this requirement.

C = Capstone course.

CONSTRUCTION PROJECT MANAGEMENT

Certificate of Proficiency

The certificate program prepares students for entry level employment in areas involving construction project management including cost/quantity estimating, project scheduling, and CAD Technician. Program includes coursework in construction print reading, green building & sustainability, CAD, scheduling, and construction management practices. Students may apply all program credits toward the Construction Engineering Technology Degree program.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010 with grade of "C" or higher.
- Eligibility for MATH-1060 with grade of "C" or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Monitoring project work for compliance with contract documents.
2. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.
3. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, perform contract document tasks, and implement project processes for successful project completion.
4. Use various methods to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard software.
5. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.
6. Use verbal and written skills with technological tools to clearly and effectively communicate using appropriate protocols to project stakeholders.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
CNST-1281	Construction Engineering Orientation	3
CNST-1730	Construction Print Reading	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications	3
MATH-1280	Advanced Intermediate Algebra	5
		16
<u>Second Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
CNST-1410	Architectural CAD I	3
CNST-2130	Construction Methods, Materials and Equipment	3
CNST-2631	Construction Management Systems	3
CNST-xxxx	CNST Elective	3
		16
	PROGRAM TOTAL	32

CRIMINAL JUSTICE

Associate of Applied Science degree in Criminal Justice (formerly Law Enforcement)

Various aspects of law enforcement and criminal justice are covered, including policing, the judicial system, criminal investigations, industrial/corporate security and juvenile delinquency. The program sequence offers a balanced and broad education to students who plan to enter law enforcement as a career. It helps in-service police officers upgrade themselves for advancement within the ranks. Many students join a municipal force but career opportunities also are available in county, state and federal governments.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.
2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Apply understanding of law enforcement culture to develop and refine skill sets essential to specific law enforcement positions.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
CJ-1000	Introduction to Criminal Justice	3
CJ-1120	Criminal Court Procedure	2
CJ-1130	Criminal Evidence	2
CJ-1320	Ethics in Criminal Justice	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		18
<u>Second Semester</u>		<u>Credits</u>
CJ-1010	Computers in Criminal Justice	2
CJ-1111	Constitutional Law for Police	3
CJ-1330	Criminal Law	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology ... OR	
UST-1010	Introduction to Urban Studies	-
		17

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CRIMINAL JUSTICE (Continued)

<u>Third Semester</u>		<u>Credits</u>
CJ-2300	Juvenile Delinquency	2
CJ-2390	The Investigative Process	4
CJ-xxxx	Criminal Justice Elective	3
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher ¹	<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
CJ-2360	Community Oriented Policing	3
CJ-2440	Protection Services	2
CJ-2990	Issues in Supervision C	4
PSY-2xxx	Any 2000-level PSY elective course	<u>3</u>
		12

PROGRAM TOTAL 62

¹SPCH-1010 highly recommended.

C = Capstone course.

**CRIMINAL JUSTICE
(Basic Police Academy)**

Associate of Applied Science degree in Criminal Justice with a concentration in Basic Police Academy (formerly Law Enforcement (Basic Police Academy))

This program is designed for students who have made the career decision to be peace officers and are enrolled in the Basic Peace Officer Academy affiliated with Cuyahoga Community College. The program provides opportunities for specific police training, as well as the educational base to prepare for career promotions.

Program Admission Requirements:

- Required - Contact Police Academy Office at the Unified Technologies Center. 216-987-3076.
- High School Diploma/GED

Other Information:

- Current valid driver's license.
- Must be at least 21 years of age at completion of academy.
- No felony convictions (misdemeanor convictions will be reviewed by Academy commander).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.
2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.

5. Apply law enforcement culture and theory in the technical areas of firearm and patrol techniques, defensive driving and traffic enforcement and investigation.
6. Sit for the Ohio Peace Officer Training Commission (OPOTC) Exam.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
CJ-1000	Introduction to Criminal Justice	3
CJ-1120	Criminal Court Procedure	2
CJ-1130	Criminal Evidence	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology ... OR	
UST-1010	Introduction to Urban Studies	-
		19

<u>Second Semester</u>		<u>Credits</u>
CJ-1111	Constitutional Law for Police	3
CJ-1300	Patrol Operations ¹	4
CJ-1310	Traffic Enforcement and Investigation ¹	3
CJ-1330	Criminal Law ¹	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
HLTH-1230	Standard First Aid and Personal Safety ¹	1
PE-1000	Personal Fitness ¹	<u>2</u>
		19

<u>Third Semester</u>		<u>Credits</u>
CJ-1320	Ethics in Criminal Justice	2
CJ-2300	Juvenile Delinquency	2
CJ-2370	Fire Arms Techniques ¹	3
CJ-2380	Defensive Driving ¹	2
CJ-2390	The Investigative Process ¹	4
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher ²	<u>3</u>
		19

<u>Fourth Semester</u>		<u>Credits</u>
CJ-1020	Introduction to Homeland Security ¹	2
CJ-2360	Community Oriented Policing	3
CJ-2990	Issues in Supervision C	4
MATH-1xxx	1000-level MATH course or higher	3
PSY-2xxx	Any 2000-level PSY elective course	<u>3</u>
		15
	PROGRAM TOTAL	72

¹Students will receive credit for these courses upon successful completion of the Police Academy Program.

²SPCH-1010 highly recommended.

C = Capstone course.

Program Sequences

CRIMINAL JUSTICE (Corrections)

Associate of Applied Science degree in Criminal Justice with a concentration in Corrections

(formerly Law Enforcement (Corrections))

This program provides a broad overview of corrections, probation and parole in both concepts and procedures. There are opportunities for employment in this growing field in local, state and federal agencies working in corrections at both community and institutional levels.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.
2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Apply psychology and counseling principles and knowledge of community corrections, correctional facilities and programs to manage and provide services to community based and institutionalized offenders and prepare institutionalized offenders for community re-entry when appropriate.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
CJ-1000	Introduction to Criminal Justice	3
CJ-1070	Introduction to Corrections	3
CJ-1120	Criminal Court Procedure	2
CJ-1130	Criminal Evidence	2
CJ-1320	Ethics in Criminal Justice	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		18

<u>Second Semester</u>		<u>Credits</u>
CJ-1010	Computers in Criminal Justice	2
CJ-1500	Community Intervention Resources	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology ... OR	
UST-1010	Introduction to Urban Studies	
		18

<u>Third Semester</u>		<u>Credits</u>
CJ-2300	Juvenile Delinquency	2
CJ-2510	Community Supervision and Aftercare	4
CJ-xxxx	Criminal Justice Elective	3
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher ¹	3
		15

<u>Fourth Semester</u>		<u>Credits</u>
CJ-2530	Correctional Case Management	3
CJ-2840	Corrections: Principles and Practices	3
CJ-2990	Issues in Supervision C	4
PSY-2xxx	Any 2000-level PSY elective course	3
		13

PROGRAM TOTAL 64

¹SPCH-1010 highly recommended.

C = Capstone course.

CRIMINAL JUSTICE (Security Administration)

Associate of Applied Science degree in Criminal Justice with a concentration in Security Administration

(formerly Law Enforcement (Security Administration))

This program is designed to prepare individuals working in various aspects of private or contract security service to assume administrative roles, as well as to broaden the knowledge of those employed in limited functional activities within the industry to assume more responsible positions in areas of loss prevention and detection, protection of life and property or investigative work.

Program Admission Requirements:

- Required. Most civil service exams require a high school diploma or GED.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.
2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.
3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.
4. Maintain personal health and well-being in carrying out professional responsibilities.
5. Conduct security surveys and investigations to protect resources and manage risk.
6. Apply basic business management principles and practices to risk management and asset protection personnel.
7. Effectively interact with local, state and federal government.

Suggested Semester Sequence

First Semester		Credits
CJ-1000	Introduction to Criminal Justice	3
CJ-1050	Introduction to Security	2
CJ-1120	Criminal Court Procedure	2
CJ-1320	Ethics in Criminal Justice	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology ... OR	
UST-1010	Introduction to Urban Studies	-
		18

Second Semester		Credits
CJ-1400	Assets Protection	4
CJ-xxxx	Criminal Justice Elective	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		16

Third Semester		Credits
CJ-2400	Security Management	4
CJ-2410	Security Investigation	3
CJ-2420	Legal Aspects of Private Security	3
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher ¹	3
		16

Fourth Semester		Credits
CJ-2440	Protection Services	2
CJ-2990	Issues in Supervision C	4
FIRE-2321	Fire Protection Systems	2
PSY-2xxx	Any 2000-level PSY elective course	3
SOC-2xxx	Any 2000-level SOC elective course ... OR	3
UST-2xxx	Any 2000-level UST elective course	-
		14
PROGRAM TOTAL		64

¹SPCH-1010 highly recommended.

C = Capstone course.

DEAF INTERPRETIVE SERVICES

Associate of Applied Science degree in Deaf Interpretive Services

This program provides students with knowledge in the area of deafness and Deaf Culture, as well as skills in American Sign Language (ASL), other sign language systems, and methods of interpreting/transliterating. The curriculum is divided into two areas of study - Sign Language and Interpreter Training. Sign Language courses will provide the knowledge of ASL as a foreign language and English-based sign systems, while DIS courses provide the interpreting/transliterating skills necessary for students to seek K-12 state licensure upon graduation and National Interpreter Certification (NIC) after gaining experience working as an interpreter. Graduates of the program may work in the fields of medicine, business, video relay (VRS) or in other settings as a freelance provider as well as in a variety of educational settings. Graduates would be employed either as a freelance provider or an agency employee.

Program Manager – 216-987-5219

Program Admission Requirements:

- Required - contact DIS Program Coordinator/Manager 216-987-5219
- High School Diploma/GED
- ENG-1010 College Composition I (“B” grade or higher)
- ASL-1001, ASL-1010, DIS-1300, and EDUC-1011 (“B” grade or higher in each)

Other Information:

- Non-degree students may enroll for individual DIS courses, providing they meet the course specific prerequisites and have received permission from the DIS Program Manager.
- Any student who has not taken ASL classes for one academic year or more will be required to take an ASL placement test in order to be considered for DIS program admission. All transfer students are required to take a placement test. Please contact Donna Liebenauer at 216-987-5219.
- All DIS students entering practicum courses must undergo fingerprinting and background check to satisfy the K-12 practicum requirement. There is a fee for this screening.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Interpret in American Sign Language (ASL).
2. Transliterate in English-based sign systems.
3. Speak as native English user while interpreting for a person who is deaf.
4. Conduct yourself professionally and ethically according to the Registry of Interpreters for the Deaf (RID) and National Association of the Deaf (NAD) Code of Professional Conduct.
5. Be eligible for licensure from the Ohio Department of Education (ODE).
6. Sit for NAD-RID National Interpreter Certification (NIC).

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ASL-1001	Fingerspelling	2
ASL-1010	Beginning American Sign Language I	4
DIS-1300	Interpreting Fundamentals	3
EDUC-1011	Introduction to Education	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	—
		15

<u>Second Semester</u>		<u>Credits</u>
ASL-1020	Beginning American Sign Language II	4
ASL-1100	Deaf Culture	3
DIS-1402	American Sign Language Linguistics	3
EDUC-1411	Individuals with Exceptionalities	3
		13

<u>Summer Semester</u>		<u>Credits</u>
ASL-2010	Intermediate American Sign Language I	4
BADM-1050	Professional Success Strategy ... OR	3
C&CR-1350	Legal Terminology ... OR	
DIS-1xxx	Deaf Interpretive Services elective ... OR	
GEN-1022	Strategies for Success ... OR	
MA-1020	Medical Terminology I ... OR	
PHIL-1000	Critical Thinking ... OR	
THEA-1500	Acting I	
DIS-1310	Interpreting I	2
DIS-2320	Educational Interpreting	3
		12

<u>Third Semester</u>		<u>Credits</u>
ASL-2020	Intermediate American Sign Language II	4
DIS-1850	Practicum I	2
DIS-1970	Practicum Seminar I	1
DIS-2300	Transliterating	2
DIS-2310	Interpreting II	2
		11

<u>Fourth Semester</u>		<u>Credits</u>
ASL-2411	Advanced American Sign Language	4
DIS-2410	Voicing	2
DIS-2850	Practicum II C	2
DIS-2970	Practicum Seminar II	1
MATH-1xxx	1000-level MATH course or higher	3
		12

PROGRAM TOTAL 63

C = Capstone course.

DENTAL ASSISTING

Certificate of Proficiency

This program has been deleted effective Fall 2014. Students interested in Dental Assisting should pursue the short-term certificate.

DENTAL ASSISTING

Short-Term Certificate

Dental Assistants are competent in technical, interpersonal and management areas. They work directly with dentists and patients and have responsibility for chairside assisting, taking dental radiographs (x-rays), laboratory procedures, business procedures and patient management. This certificate prepares graduates for entry-level positions and the ability to be licensed as an Ohio Dental Assistant Radiographer. Graduates may be eligible to take the Dental Assisting National Board Certification Exam and the Ohio Dental Assistants Certification Exam once specific exam criteria is met.

Program Manager - 216-987-4494

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Completion of ENG-1010 or ENG-101H (part-time option, check with program manager).
- 20 hours of recent observation or employment in a dental setting.
- Criminal background check required (see page 73).
- GPA required: 2.0

Other information:

- 15 students accepted per year
- See program manager if unable to meet observation/work requirement
- Dental Assisting Award available; contact department

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use dental terminology to communicate effectively with patients, colleagues and other dental professionals.
2. Use team skills including conflict resolution to enhance office productivity.
3. Act professionally and ethically according to ADAA Code of Ethics and HIPAA Guidelines.
4. Recognize medical emergencies and respond with health care provider, CPR and other appropriate measures.
5. Meet the eligibility requirement of the Ohio State Dental Board for Dental Assistant and Radiographer certifications.
6. Apply proper utilization of standard precautions during the performance of direct patient care (including room prep, lab duties, care and maintenance of instruments and equipment, dental radiography, management of dental materials and inventory and four-handed dentistry) to ensure dental practice efficiency.
7. Sit for the Ohio Dental Assisting Certification Exam after completing 500 clinical hours of dental assisting.

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
<u>First Semester</u>		<u>Credits</u>
DAST-1300	Dental Assisting Methods I	5
DAST-1310	Dental Assisting Radiography I	3
DAST-1320	Dental Office Management	3
DAST-1200	Oral Structure and Development	3
		14
<u>Second Semester</u>		<u>Credits</u>
DAST-1850	Dental Assisting Practice	2
		2
PROGRAM TOTAL		19

DENTAL OFFICE MANAGEMENT

Short-Term Certificate

This certificate prepares graduates for entry-level positions as Dental Office Managers in dental offices and clinics. Dental Office Managers are competent in scheduling and management areas of a dental practice. The program provides instruction in patient scheduling, accounting principles, telephone etiquette, collections, banking, third party reimbursement responsibilities, professional ethics and computer applications.

Program Manager - 216-987-4494

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Eligibility for ENG-1010 (part-time option, check with program manager).
- Completion of MATH-0910

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use dental terminology to communicate effectively with patients, colleagues and other dental professionals.
2. Use team skills including conflict resolution to enhance office productivity.
3. Act professionally and ethically according to ADAA Code of Ethics and HIPAA Guidelines.
4. Recognize medical emergencies and respond with health care provider, CPR and other appropriate measures.
5. Use telephone protocols, computer skills, scheduling and patient data collection, and marketing techniques to optimize office efficiency and maximize practice income.

(continued on next page)

Program Sequences

DENTAL OFFICE MANAGEMENT (Continued)

6. Apply knowledge of basic insurance coverage and accounting skills to process claims and manage financial arrangements, accounts payable and receivables and payroll.
7. Coordinate smooth operational flow to include: compliance, office maintenance, supplies, purchasing, establishing policies and procedures, and human resource management and marketing.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1000	Keyboarding	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
DAST-1200	Oral Structure and Development	3
DAST-1320	Dental Office Management	3
DAST-1330	Reimbursement for Dental Services	<u>2</u>
		16
	PROGRAM TOTAL	16

¹To ensure success in the certificate, students should complete ENG-1010 prior to enrolling in other courses OR take the placement test and be eligible to take ENG-1010.

DENTAL HYGIENE

Associate of Applied Science degree in Dental Hygiene

Dental Hygienists are licensed primary health care professionals, health care educators and clinicians who provide preventive, educational and therapeutic services supporting total health for the control of oral diseases and the promotion of oral health. Employment opportunities exist in private practices, health care agencies, hospitals, sales, government research programs and in dental hygiene education programs. Upon successful completion of this curriculum, the graduate may take national and regional board examinations and apply for licensure.

Program Manager 216-987-4494

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete the program admission requirements (listed on next page) with a "C" or higher in each.
- GPA required: 3.0 admission requirements, 2.5 overall
- 20 hour observation/work experience. 16 hours in a dental setting that employs a Registered Dental Hygienist. 4 hours must be in the Dental Hygiene Clinic at the Metro Campus; Please call (216) 987-4413 to schedule appointment. Please refer to the form in the application packet.

Other Information:

- 24 students accepted per year.

- Science courses (BIO-1100, BIO-2331, BIO-2341) must have been completed within five (5) years of admission to the program.
- ENG-1010, ENG-101H, PSY-1010, PSY-101H and or (1) science course may be repeated once to improve a grade.
- Successful completion of Tri-C authorized background check, fingerprinting and BCI records search required (see page 73).
- Overall GPA must not fall below 2.5 while awaiting matriculation into the Dental Hygiene program.
- Non-native English speaking applicants: The Commission on Dental Accreditation and Cuyahoga Community College Dental Hygiene Program Competencies mandate that students be competent in interpersonal and communication skills to effectively interact with diverse populations. The ability to communicate verbally and in written form is basic to the provision of oral health services in a safe and effective manner. Therefore, applicants whose native language is not English must take the TOEFL - see <http://www.toefl.org>. Applicants must achieve the following minimum scores: READING-21, LISTENING-21, WRITING-23 and SPEAKING-25.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Act responsibly toward self, peers, faculty and clients.
2. Demonstrate critical thinking and decision-making skills in all aspects of client care.
3. Communicate verbally and in writing to clients, colleagues and other professionals.
4. Integrate the Code of Ethics for Dental Hygienists with evidence of skills in ethical reasoning.
5. Incorporate professional integrity and continued growth into all aspects of dental hygiene care.
6. Determine the validity of oral health services in various segments of the community using evidence-based methods.
7. Demonstrate the ability to promote oral health in the global community.
8. Recognize the need and follow protocol indicated for medical emergencies that occur in an oral health care environment.
9. Accurately collect, analyze and document current and historical data on the systemic/oral health status of a variety of clients that impacts the delivery of dental hygiene care.
10. Utilize all the information gleaned through the assessment process and develop a comprehensive dental hygiene diagnosis incorporating current research.
11. Devise a client-centered dental hygiene care plan that is evidence-based.
12. Apply appropriate treatment modalities and communicate oral health education concepts that will culminate in achieving the dental hygiene care plan.
13. In partnership with the client, determine if the implementation phase was effective in achieving the goals outlined in the comprehensive dental hygiene care plan and modify when indicated.

DENTAL HYGIENE (Continued)

14. In partnership with the client, ensure that documentation is complete and accurate of all collected data, treatment planned and provided, recommendations and other information relevant to client care and treatment.

Suggested Semester Sequence

<u>Program Admissions Requirements Semester</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹	3
BIO-2331	Anatomy and Physiology I 2	4
BIO-2341	Anatomy and Physiology II	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		17

<u>First Semester</u>		<u>Credits</u>
DENT-1300	Preventive Oral Health Services I	4
DENT-1311	Dental Anatomy, Histology & Embryology	2
DENT-1320	Dental Hygiene Fundamentals	1
DENT-1330	Radiology	3
DENT-1340	Dental Hygiene Care Ethics	1
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
		-
		14

<u>Second Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
DENT-1400	Preventive Oral Health Services II	5
DENT-1410	Current Concepts in Dental Materials	2
DENT-1420	Periodontics I	2
DENT-1431	Head and Neck Anatomy	2
DENT-1440	General and Oral Pathology	2
		17

<u>Third Semester</u>		<u>Credits</u>
DENT-2200	Local Anesthesia and Pain Management	2
DENT-2300	Preventive Oral Health Services III	5
DENT-2320	Periodontics II	2
DENT-2332	Pharmacology and Therapeutics	2
DENT-2340	Community Oral Health I	1
DIET-1220	Nutrition for Dental Hygiene ³	2
SPCH-1000	Fundamentals of Interpersonal Communication ... OR	3
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
		17

<u>Fourth Semester</u>		<u>Credits</u>
DENT-2400	Preventive Oral Health Services IV	5
DENT-2440	Community Oral Health II	1
DENT-2990	Dental Hygiene Practice C	1
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology	-
		10
PROGRAM TOTAL		75

¹CHEM-1010 and 1020 will be accepted in place of BIO-1100.

²BIO-2330 & 2340 will be accepted in place of BIO-2331 & BIO-2341.

³DIET-1200 will be accepted in place of DIET-1220.

C = Capstone course.

DIAGNOSTIC MEDICAL SONOGRAPHY

Associate of Applied Science degree in Diagnostic Medical Sonography

The Associate of Applied Science degree prepares the student for an entry-level position as a Diagnostic Medical Sonographer for employment in hospitals and other health care agencies. The Diagnostic Medical Sonographer produces, evaluates, and correlates ultrasound images and related data. Sonographers provide a summary of their technical findings to the qualified interpreting physician to aid in rendering a medical decision. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical applications at our affiliated health care institutions. The program offers specialty training in adult echocardiography and vascular technology. The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Upon completion of the Diagnostic Medical Sonography program, graduates are eligible to apply for the national credentialing exams by the American Registry of Diagnostic Medical Sonography (ARDMS) in the exam offerings of their specialty option. Students will also have the option to individualize and enhance their sonography career by taking coursework in other sonography specialty coursework such as breast sonography and pediatric cardiac sonography. **Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.**

Program Manager – 216-987-5564

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be submitted mid-semester of the last requirement(s) taken as listed below. Students must request an application packet from the health careers enrollment center 216-987-4247 for comprehensive admissions and program information. Students may also access the DMS website for this information. <http://www.tri-c.edu/programs/healthcareers/sonography/Pages/Default.aspx>
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH-1141, MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610 with "C" or higher.
- Complete each of the following with "C" grade or higher: BIO-2331 and 2341 (or BIO-2330 and BIO-2340), DMS-1071, DMS-1303, DMS-1320, DMS-1351.
- GPA required: Minimum 3.0 for DMS 1303, DMS 1320 and DMS 1071 (total 5 credits). Minimum 3.0 for BIO 2331 and BIO 2341 (total 8 credits). GPA calculated using only the Tri-C specific admission course credit hours listed above.
- Verification of having completed a 8-16 hour observation where the candidate "shadows" an ARDMS-credentialed sonographer in the hospital environment. 50% of the exams observed should be on in-patients. See the DMS application packet for details and the required form.

Other Information:

- 24-40 students accepted per year.
- To improve from a previous attempt, only two of the admission courses may be repeated once. A "W" is counted as an attempt.

- Criminal background check required (see page 73). See General Application Procedures for Health Careers.
- Non-native English speaking applicants: TOEFL minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, due to DMS Program Technical Standards for written and verbal English communication skills. Arrangements and costs incurred for the TOEFL (www.ets.org) will be the responsibility of the student.
- Applicant must submit evidence of good health by fulfilling health requirements of the DMS Program and verification of current CPR certification prior to clinical assignment. Complete information provided during the first semester of the Program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Exhibit an awareness of continuity of care through effective, empathetic communication and interpersonal skills.
2. Display sensitivity to all aspects of diversity.
3. Seek and accept opportunities for improvement by being a team player that is confident, flexible, and passionate about what they do.
4. Exercise discretion, knowledge, and independent judgment in performing sonographic procedures, accessing medical information systems, and in seeking assistance.
5. Integrate pertinent patient history, supporting clinical data, and data obtained using ultrasound and related diagnostic technologies to provide a summary of findings to the physician.
6. Become a credentialed sonographer that continually educates oneself in sonography and in issues affecting the healthcare industry in recognition of the value of other modalities and professions.

Letters in parenthesis relate to Options a, b, c, and d. Select option(s) when applying for this program.

Suggested Semester Sequence		Credits
Program Admissions Requirements	Semester	
BIO-2331	Anatomy and Physiology I	4
BIO-2341	Anatomy and Physiology II	4
DMS-1071	Concepts of Physics in Diagnostic Sonography	2
DMS-1303	Introduction to Sonography	2
DMS-1320	Introduction to Sonographic Scanning	1
DMS-1351	Patient Care Skills	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra and Mathematical Reasoning ¹	3
		20

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**DIAGNOSTIC MEDICAL SONOGRAPHY
(Continued)**

<u>First Semester</u>		<u>Credits</u>
DMS-1311	Initial Sonographic Scanning	2
DMS-1602	Echocardiography I (a) ... OR	4
DMS-1701	Vascular Sonography I (b)	
DMS-235B	Doppler Principles and Instrumentation	1
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		13

<u>Second Semester</u>		<u>Credits</u>
DMS-1940	Field Experience I	1
DMS-2301	Intermediate Sonographic Scanning	2
DMS-2602	Echocardiography II (a) ... OR	4
DMS-2702	Vascular Sonography II (b)	
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
PSY-1060	Cross-Cultural Competency for Health Care Providers	1
		11

<u>Summer Semester</u>		<u>Credits</u>
DMS-1950	Field Experience II	2
DMS-2000	Sonographic Case Studies	1
		3

<u>Third Semester</u>		<u>Credits</u>
DMS-235A	Sonographic Principles, Performance, and Safety	2
DMS-2940	Field Experience III	3
DMS-2985	Physics Review	1
DMS-2991	Sonography Capstone	1
		7

<u>Fourth Semester</u>		<u>Credits</u>
DMS-2950	Field Experience IV	1
DMS-2981	Specialty Registry Review	1
DMS-xxxx	Diagnostic Medical Sonography Elective ²	1 - 3
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
SPCH-1xxx	Any 1000 level SPCH elective course or higher	3
		9 - 11

PROGRAM TOTAL 63 - 65

¹Only the following will be accepted in place of Math 1141: MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610.

²Course selection requires departmental approval

Letters in parenthesis relate to Options a and b. Select option when applying for this program. Program Total for Option a =62-64 credits; Program Total for Option b =62-64 credits

C = Capstone course.

OPTIONS

(a)Echocardiography Option. Total=62 - 64 Credits

Take the following courses to complete Option A:

DMS 1602	Echocardiography I	4
DMS 2602	Echocardiography II	4

(b)Vascular Option. Total=62 - 64 Credits

Take the following courses to complete Option B:

DMS 1701	Vascular Sonography I	4
DMS 2702	Vascular Sonography II	4

ELECTIVES

Technical Electives Credits

Select from the following courses to fulfill DMS elective option:

DMS 1260	Pediatric Cardiovascular Anatomy, Physiology and Assessment	2
DMS 1381	Cardiac Diagnostic Procedures	3
DMS 2330	Sonographic Pathology	3
DMS 2450	Breast Sonography	2
DMS 2650	Pediatric Cardiac Sonography	3
DMS 2750	Principles of Vascular Imaging for Abdomen and Cardiac Sonographers	3
DMS 2960	Supplemental Field Experience	2
DMS 2983	Supplemental Specialty Registry Review	1

DIAGNOSTIC MEDICAL SONOGRAPHY (General Sonography)

Associate of Applied Science degree in Diagnostic Medical Sonography with a concentration in General Sonography.

The Associate of Applied Science degree prepares the student for an entry-level position as a Diagnostic Medical Sonographer for employment in hospitals and other health care agencies. The Diagnostic Medical Sonographer produces, evaluates, and correlates ultrasound images and related data. Sonographers provide a summary of their technical findings to the qualified interpreting physician to aid in rendering a medical decision. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical applications at our affiliated health care institutions. The program offers specialty training in abdominal sonography and obstetrical/gynecological sonography. The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Upon completion of the Diagnostic Medical Sonography program, graduates are eligible to apply for the national credentialing exams by the American Registry of Diagnostic Medical Sonography (ARDMS) in the exam offerings of abdominal and Ob/Gyn sonography. **Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.**

Program Manager – 216-987-5564

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be submitted mid-semester of the last requirement(s) taken as listed below. Students must request an application packet from the health careers enrollment center 216-987-4247 for comprehensive admissions and program information. Students may also access the DMS website for this information. <http://www.tri-c.edu/programs/healthcareers/sonography/Pages/Default.aspx>
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH-1141, MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610 with "C" or higher.
- 16-24 students accepted per year.
- Minimum 3.0 for DMS 1303, DMS 1320 and DMS 1071 (total 5 credits)
- Minimum 3.0 for BIO-2331 and BIO-2341 (total 8 credits)
- GPA calculated using only the Tri-C specific admission course credit hours listed above.
- Verification of having completed a 8-16 hour observation where the candidate "shadows" an ARDMS-credentialed sonographer in the hospital environment. 50% of the exams observed should be on in-patients. See the DMS application packet for details and the required form.
- Complete the following Program Admissions requirements with a "C" grade or higher in each: BIO-2331, BIO-2341, DMS-1071, DMS-1303, DMS-1320, DMS-1351.

Other Information:

- To improve from a previous attempt, only two of the admission courses may be repeated once. A "W" is counted as an attempt.
- Criminal background check required (see page 73). Also see General Application Procedures for Health Careers.

- Non-native English speaking applicants: TOEFL minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, due to DMS Program Technical Standards for written and verbal English communication skills. Arrangements and costs incurred for the TOEFL (www.ets.org) will be the responsibility of the student.
- Applicant must submit evidence of good health by fulfilling health requirements of the DMS Program and verification of current CPR certification prior to clinical assignment. Complete information provided during the first semester of the Program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Exhibit an awareness of continuity of care through effective, empathetic communication and interpersonal skills.
2. Display sensitivity to all aspects of diversity.
3. Seek and accept opportunities for improvement by being a team player that is confident, flexible, and passionate about what they do.
4. Exercise discretion, knowledge, and independent judgment in performing sonographic procedures, accessing medical information systems, and in seeking assistance.
5. Integrate pertinent patient history, supporting clinical data, and data obtained using ultrasound and related diagnostic technologies to provide a summary of findings to the physician.
6. Become a credentialed sonographer that continually educates oneself in sonography and in issues affecting the healthcare industry in recognition of the value of other modalities and professions.

Suggested Semester Sequence		
<u>Program Admissions</u>	<u>Requirements Semester</u>	<u>Credits</u>
BIO-2331	Anatomy and Physiology I	4
BIO-2341	Anatomy and Physiology II	4
DMS-1071	Concepts of Physics in Diagnostic Sonography	2
DMS-1303	Introduction to Sonography	2
DMS-1320	Introduction to Sonographic Scanning	1
DMS-1351	Patient Care Skills	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra and Mathematical Reasoning ¹ <u>3</u>	<u>20</u>

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**DIAGNOSTIC MEDICAL SONOGRAPHY
(General Sonography) (Continued)**

<u>First Semester</u>		<u>Credits</u>
DMS-1311	Initial Sonographic Scanning	2
DMS-1401	Abdominal Sonography I	4
DMS-1500	Gynecologic and Obstetrical Sonography	4
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		16
<u>Second Semester</u>		<u>Credits</u>
DMS-1940	Field Experience I	1
DMS-2301	Intermediate Sonographic Scanning	2
DMS-2401	Abdominal Sonography II	4
DMS-2500	Obstetrical Sonography	4
PSY-1060	Cross-Cultural Competency for Health Care Providers	1
		12
<u>Summer Semester</u>		<u>Credits</u>
DMS-1950	Field Experience II	2
DMS-2000	Sonographic Case Studies	1
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	-
		6
<u>Third Semester</u>		<u>Credits</u>
DMS-235A	Sonographic Principles, Performance, and Safety	2
DMS-235B	Doppler Principles and Instrumentation	1
DMS-2940	Field Experience III	3
DMS-2985	Physics Review	1
DMS-2991	Sonography Capstone	1
		8
<u>Fourth Semester</u>		<u>Credits</u>
DMS-2950	Field Experience IV	1
DMS-2981	Specialty Registry Review	1
DMS-xxxx	Diagnostic Medical Sonography Elective	1 - 3
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
SPCH-1xxx	Any 1000 level SPCH elective course or higher	3
		9 - 11
	PROGRAM TOTAL	71 - 73

 = Capstone course.

¹Only the following will be accepted in place of MATH-1141: MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610.

ELECTIVES

<u>Technical Electives</u>		<u>Credits</u>
Select from the following courses to fulfill DMS elective option:		
DMS-1260	Pediatric Cardiovascular Anatomy, Physiology and Assessment	2
DMS-1381	Cardiac Diagnostic Procedures	3
DMS-2330	Sonographic Pathology	3
DMS-2450	Breast Sonography	2
DMS-2650	Pediatric Cardiac Sonography	3
DMS-2750	Principles of Vascular Imaging for Abdomen and Cardiac Sonographers	3
DMS-2960	Supplemental Field Experience	2
DMS-2983	Supplemental Specialty Registry Review	1

DIETETIC TECHNOLOGY

Associate of Applied Science degree in Dietetic Technology

A Graduate of the Dietetic Technology Program or Dietetic Technician is a food and nutrition practitioner, often working in conjunction with a Registered Dietitian. Dietetic Technicians work in a variety of employment settings including health care (assisting Registered Dietitians in providing medical nutrition therapy), in hospitals, HMO's, clinics, or other health care facilities. Dietetic Technicians may also work in community and public health settings such as schools or day care centers, correctional facilities, weight management clinics, and WIC programs. A growing number work in the food and nutrition industry, as contract employees for food management companies or food vending and distribution, developing menus and overseeing foodservice sanitation and food safety or providing nutrition labeling information and analysis. This program is accredited by The Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040, ext. 5400.

Program Manager - 216-987-4613

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning or higher
- Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
- GPA required: 2.0 admission requirements, 2.0 overall

Other Information:

- 20 students accepted per year.
- Dietetic Technology students are required to complete 30 hours of volunteer time in order to graduate from the program. 15 hours must be completed prior to program admission. Please contact Program Manager for instructions. Volunteer hours are defined as time spent in an nutrition related activity outside of classroom or supervised practice/practicum hours. The student is required to submit a Volunteer Hour Verification form for each volunteer activity and a summary of Volunteer Hours upon completion of the 30 hours. The 30 hours must be completed at a minimum of 6 different sites.
- Sufficient score on Biology placement test or grade of "C" or higher in BIO-1100.
- Student must pass criminal background check BCI prior to admission into DTP as specified: <http://www.tri-c.edu/programs/healthcareers/Pages/BackgroundCheckInformation.aspx>. (See also page 73).
- Information regarding cost to student, such as estimated expenses for travel, books, liability insurance, medical exams, uniforms and other DTP specific costs, in addition to tuition can be found at: <http://www.tri-c.edu/programs/healthcareers/dietary/Pages/default.aspx>
- General Nutrition certificate available.
- Dietary Manager certificate available.
- DTP Goals and Graduate Outcomes can be found at <http://www.tri-c.edu/programs/healthcareers/dietary/Pages/default.aspx>

(continued on next page)

Program Sequences

DIETETIC TECHNOLOGY (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Perform professionally and ethically according to ADA Code of Ethics and Commission on Dietetic Registration Standards, applying new knowledge within community and work setting.
2. Participate in development, implementation, evaluation and maintenance of community based food and nutrition programs/work site promotion of disease prevention programs for diverse populations.
3. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings and make appropriate referrals, and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.
4. Apply knowledge of mathematics to develop and analyze recipes, formulas and diets; apply financial and procurement principles to collecting and processing financial data.
5. Use appropriate interpersonal skills, medical terminology and technology in written and verbal communication with interdisciplinary teams, patients/clients and family members.
6. Apply educational and psychological principles to develop and implement educational and training programs for patients, clients, and target audience within scope of practice.
7. Apply supervisory concepts to food production including procurement, distribution/service, menu development; applying sensory evaluation and safety/sanitation principle and concepts.
8. Apply supervisory concepts to the organizational unit, including financial, human, physical, and material resources and services.
9. Apply evidence-based research and management principles to human resource functions, facility management, organizational change, planning and goal setting, development and measurement of outcomes, and quality improvement (QI).

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
BIO-2331	Anatomy and Physiology I	<u>4</u>
		7

<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
DIET-1200	Basic Nutrition	3
DIET-1320	Nutrition Applications	1
DIET-1310	Introduction to Dietetics	2
HOSP-1020	Sanitation and Safety	2
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
DIET-1331	Fundamentals of Food Production	4
DIET-1580	Cost Control Procedures	1
DIET-1590	Purchasing Procedures	1
DIET-1600	Introduction to Supervision	3
DIET-1850	Food and Nutrition Systems Practicum	<u>4</u>
		13

<u>Third Semester</u>		<u>Credits</u>
DIET-2301	Medical Nutrition Therapy I	3
DIET-2410	Life Cycle Nutrition - Pregnancy and Lactation	1
DIET-2420	Life Cycle Nutrition - Nutrition for Children	1
DIET-2430	Life Cycle Nutrition - Nutrition through Adulthood	1
DIET-2863	Community Nutrition Practicum	2
HTEC-1120	Critical Thinking in Healthcare	1
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	-
		18

<u>Fourth Semester</u>		<u>Credits</u>
DIET-2862	Geriatric Nutrition Practicum	2
DIET-2990	Dietetic Technology Professional Development Skills C	2
DIET-2501	Nutrition Applications in Long Term Care ²	2
DIET-2311	Medical Nutrition Therapy II ¹	3
DIET-2320	Medical Nutrition Therapy III ¹	2
DIET-2850	Medical Nutrition Care Practicum	<u>2</u>
		13
PROGRAM TOTAL		66

²2nd eight week course.

¹1st eight week course.

C = Capstone course.

DIETARY MANAGEMENT

Certificate of Proficiency

This program is designed for health care employees interested in developing dietary management skills. The four major components of the program are: Nutrition and Medical Nutrition Therapy, Management of Foodservice Operations, Human Resource Management, and Sanitation and Food Safety. This program is approved by the Association of Nutrition & Foodservice Professionals (AFNP).

Degree: Students may apply credits toward the Dietetic Technology degree program.

Program Manager 216-987-4613

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141
- Seven year limit on core courses prior to application.
- 20 students accepted per year in the program.
- GPA required: 2.0 admission requirements, 2.0 overall
- General Nutrition certificate available.
- Background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Perform professionally and ethically according to ADA Code of Ethics and Commission on Dietetic Registration Standards, applying new knowledge within community and work setting.
2. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings and make appropriate referrals and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.
3. Apply knowledge of mathematics to develop and analyze recipes, formulas and diets, apply financial and procurement principles to collecting and processing financial data.
4. Use appropriate interpersonal skills, medical terminology and technology in written and verbal communication with interdisciplinary teams, patients/clients and family members.
5. Educational and psychological principles to develop and implement educational and training programs for patients, clients, and target audience within scope of practice.
6. Apply supervisory concepts to food production including procurement, distribution/service, menu development; applying sensory evaluation and safety/sanitation principle and concepts.
7. Apply supervisory concepts to the organizational unit, including financial, human, physical, and material resources and services.
8. Apply evidence-based research and management principles to human resource functions, facility management, organizational change, planning and goal setting;

development and measurement of outcomes and quality improvement.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
DIET-1200	Basic Nutrition	3
DIET-1320	Nutrition Applications	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HOSP-1020	Sanitation and Safety	2
MA-1020	Medical Terminology I	3
MATH-1060	Survey of Mathematics or higher ¹	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
DIET-1331	Fundamentals of Food Production	4
DIET-1580	Cost Control Procedures	1
DIET-1590	Purchasing Procedures	1
DIET-1600	Introduction to Supervision	3
DIET-1940	Dietary Managers Field Experience	1
DIET-2301	Medical Nutrition Therapy I	3
DIET-xxxx	DIET Elective course	<u>2-3</u>
		15 - 16
PROGRAM TOTAL		30 - 31

¹MATH-1141 recommended for students who plan to apply credits to Dietetic Technology degree program.

Program Sequences

GENERAL NUTRITION

Certificate of Proficiency

Designed for individuals and allied health care professionals who are interested in learning more about basic nutrition, but are not interested in pursuing a Dietetic Technology degree. This certificate focuses on wellness and disease prevention through proper nutrition and eating behaviors. Students earning this certificate are not qualified to practice medical nutrition therapy, as stated by the State of Ohio. Degree: Students may apply credits toward the Dietetic Technology degree program.

Degree: Students may apply credits toward the Dietetic Technology degree program.

Program Manager – 216-987-4613

Program Admission Requirements:

- Completion of Health Careers Application.
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning or higher
- Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
- 10 Students accepted per year in the program.
- GPA required: 2.0 admission requirements, 2.0 overall
- Eligibility for BIO-2331 (appropriate score on Biology placement test or BIO-1100 with "C" or higher).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Perform professionally and ethically according to ADA Code of Ethics and Commission on Dietetic Registration Standards, applying new knowledge within community and work setting.
2. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings, make appropriate referrals and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.
3. Apply knowledge of mathematics to develop and analyze recipes and formulas.
4. Communicate accurate evidence-based nutrition information both verbally and written to clients.
5. Implement education programs for target audience within scope of practice.
6. Locate and validate evidence-based research.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ¹	4
DIET-1200	Basic Nutrition	3
DIET-1320	Nutrition Applications	1
DIET-xxxx	DIET Elective	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1060	Survey of Mathematics or higher ²	3
		17

<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II ¹	4
DIET-2410	Life Cycle Nutrition - Pregnancy and Lactation	1
DIET-2420	Life Cycle Nutrition - Nutrition for Children	1
DIET-2430	Life Cycle Nutrition - Nutrition through Adulthood	1
DIET-xxxx	DIET Elective course	2 - 3
HLTH-1100	Personal Health Education	3
SES-1201	Fitness and Wellness Coaching	3
		14 - 15
	PROGRAM TOTAL	31 - 32

¹BIO-2330 & 2340 together will be accepted in place of BIO-2331 & BIO-2341.

²MATH-1141 recommended for students who plan to apply credits to Dietetic Technology Degree program.

EARLY CHILDHOOD EDUCATION

Associate of Applied Science degree in Early Childhood Education

The Early Childhood Education program prepares students to teach young children in a variety of inclusive early childhood settings, including preschools, pre-kindergartens, Head Start, child care centers and infant/toddler programs. The program is offered at the Eastern, Metropolitan and Western campuses. Students will receive a basic understanding of principles of early childhood education, child growth and development, and will develop specific skills in planning and implementing the curriculum in centers. Upon completion of the program, students will be qualified to assume lead teacher and director positions. This program is accredited by the Ohio Department of Education to prepare students for state licensure as Pre-Kindergarten Associate teachers. Graduates of this program may work with children through five years of age. To work with children in kindergarten or the primary grades, a baccalaureate degree and state teacher's license for Pre-K to third grade is required. A number of four-year teacher preparation programs have transfer agreements with the College's Early Childhood program.

The Pre-Kindergarten (Pre-K) Associate Licensure is available for students who complete the Associate of Applied Science degree in Early Childhood Education. The Pre-K Associate license also requires an overall grade point average of 2.00, a grade point average of 2.50 in Early Childhood (ECE) and Education (EDUC) courses, and 3.00 in the teaching practicums and seminar (ECED 1860, 2870, 2990). The Early Childhood Education program recommends graduates for state licensure after the student passes the Ohio Department of Education's prekindergarten education licensure exam.

Program Manager - 216-987-2513

Program Admission Requirements:

- Details of program admission will be explained to students enrolled in ECED-1010 course offered each semester.
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete Mathematics placement test
- Complete ECED-1010 with "C" grade or higher

Other Information:

- Applicants for Early Childhood Education must be able to sign the Ohio Department of Job and Family Services Statement of Nonconviction, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence [of Divisions (A)(8) or (A)(9) of Section 109.572 or division (A)(1) of 5104.09 of the Revised Code] and that no child has been removed from their home [Sect. 2151.353 Ohio Revised Code] in each Early Childhood (ECED) and Education (EDUC) course.
- The student is eligible for the Pre-Kindergarten Associate Teacher's license when the associate degree is completed with an overall GPA of 2.0, a GPA of 2.5 in all Early Childhood and Education courses, and with completion of 345 hours of faculty supervised field work earning a 3.0 in ECED-1860, 2870 and 2990.
- Pre-Kindergarten Associate teacher's license can be applied for after the student passes the licensure exam. The licensure exam is a requirement of the Ohio Department of Education and is not affiliated with Cuyahoga Community College.

- Complete BCI and FBI check required upon completion of ECED-1010 (see page 73).
- Application requirements for the Early Childhood Education degree and the Pre-Kindergarten Associate degree licensure are the same.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Support the diverse ways in which children learn by interpreting and applying knowledge of child growth and development.
2. Include and value children, families and communities; create respectful reciprocal relationships; and support and involve all families in their children's development and learning.
3. Use observation, documentation, and other appropriate assessment tools for: planning curriculum, identifying special needs, deepening understanding of child development, communicating with families and professionals and improving teaching practices.
4. Create an inviting and enriched environment that supports children's optimal growth and development within the context of group living.
5. Design, implement and evaluate experiences that promote positive development and learning for all children.
6. Integrate and use a variety of respectful, responsive teaching strategies.
7. Demonstrate acceptance of all children and families, support cultural diversity, develop a program based on anti-biased principles, and interact and relate to all persons in a responsive, respectful manner.
8. Display positive leadership qualities within an early childhood environment.
9. Use reflective and ethical practices in the classroom, advocate, access resources, practice appropriate verbal and non-verbal communication, listen and interact respectfully, and use Standard English in writing and speaking.

	Suggested Semester Sequence	Credits
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
ECED-1010	Introduction to Early Childhood Education: Children's Development and Programs	4
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		16

(continued on next page)

Program Sequences

EARLY CHILDHOOD EDUCATION (Continued)

<u>Second Semester</u>		<u>Credits</u>
BIO-1050	Human Biology	3
BIO-105L	Human Biology Laboratory	1
ECED-1301	Language and Literacy in an Integrated Curriculum	3
ECED-1311	Art and Creative Expression in an Integrated Curriculum	3
EDUC-1011	Introduction to Education	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	–
		16
<u>Summer Semester</u>		<u>Credits</u>
EDUC-1020	Educational Technology	3
EDUC-2050	Human Diversity in Education	3
ECED-2300	Child Behavior and Guidance	<u>3</u>
		9
<u>Third Semester</u>		<u>Credits</u>
ECED-1321	Math and Science Inquiry in an Integrated Curriculum	3
ECED-1331	Music & Movement in an Integrated Curriculum	3
ECED-1860	Experience with Young Children in Early Childhood Settings	3
ECED-2500	Infant/Toddler Development, Relationships, and Programs	3
EDUC-1411	Individuals with Exceptionalities	<u>3</u>
		15
<u>Fourth Semester</u>		<u>Credits</u>
ECED-2401	Families, Communities & Schools	3
ECED-2870	Early Childhood Education Student Teaching Practicum <input type="checkbox"/>	2
ECED-2990	Early Childhood Education Student Teaching Seminar <input type="checkbox"/>	3
PSY-2110	Educational Psychology	<u>3</u>
		11
	PROGRAM TOTAL	67

= Capstone course.

CHILD CARE ADMINISTRATION

Short-Term Certificate

The Child Care Administration short term certificate program will provide courses in leadership/advocacy, early childhood education organization and administration, and small business management to prepare students to assume leadership and management positions in the field of early childhood education in settings such as: Head Start, cooperative preschools, child care centers, and day care programs serving children from 0 through 12 years of age. Upon program completion, students will meet the education requirements of the Ohio Department of Job and Family Services day care licensing rules for center administrator and be eligible for the Ohio Child Care Resource and Referral Association Administrator Credential.

Program Manager - 216-987-2513

Program Admission Requirements:

- Program Application is required. Contact Program Manager-Teacher Education at 216-987-2513.
- High School Diploma/GED required.
- Complete ENG-1010 or ENG-1010H with grade of "C" or higher.
- Complete ECED-1010 with grade of "C" or higher.
- Applicants for Early Childhood Education short-term certificate must be able to sign the Ohio Department of Job and Family Services Statement of Nonconviction, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence [Sections (A)(8) or(A)(9) 109.572, or (A)(1) 5104.09 of the Ohio Revised Code] and that no child has been removed from their home [2151.353 of the Ohio Revised Code].
- Applicants must complete BCI background check before enrolling in ECED 1400.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use research-based and best practices to include and value children, families and communities; create collaborative respectful reciprocal relationships; support and involve families in advocating for their children's development and learning.
2. Ensure staff is educated and supported to design, implement, assess, and improve curriculum that is developmentally appropriate, culturally relevant, anti-biased, research-based, and aligned to the state standards and the center's mission, vision, and philosophy in order to meet the needs of critical stakeholders (students, families, staff, community, board members, etc.).
3. Develop, implement, evaluate, and revise the organization's strategic plan, short and long term goals, program structure, mission, vision, and philosophy to meet its goals and fulfill its mission involving staff, families, and other stakeholders when appropriate.

(continued on next page)

CHILD CARE ADMINISTRATION (Continued)

4. Advocate and collaborate with policy makers and the public; set staff expectations and provide professional development opportunities and feedback; communicate, motivate, involve, and delegate in a respectful, positive, and meaningful way in order to provide the community with high quality programs.
5. Plan, analyze, interpret, manage, and evaluate markets, communication, budgetary and accounting practices, resources, information, facilities, and disaster emergency preparedness in order to maintain long-term organizational sustainability and provide quality programs and services to families and children.
6. Meet the educational requirements of the Ohio Child Care Resource and Referral Association (OCCRRA) for the Ohio Administrator Credential.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>Summer Semester</u>		
ECED-1010	Introduction to Early Childhood Education: Children's Development and Programs	4
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	7
<u>First Semester</u>		
ECED-1400	Administration and Leadership in Early Childhood	4
ECED-2300	Child Behavior and Guidance	3 7
<u>Second Semester</u>		
BADM-1300	Small Business Management	4
ECED-2401	Families, Communities & Schools	3 7
PROGRAM TOTAL		21

Students who complete the short-term certificate in child care administration must contact the Ohio Child Care Resource and Referral Association (OCCRRA) for Administrator Credential.

CHILD DEVELOPMENT

Short-Term Certificate

The Child Development short term certificate provides students with a specialized comprehensive focus on preparation of applying for the Child Development Associate Credential. The sequence of courses support students with a broader understanding of child development, critical thinking skills, and practice through field experience.

Program Manager - 216-987-2513

Program Admission Requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H
- Complete ECED-1010 with grade "C" or higher

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Include and value children, families and communities, create respectful reciprocal relationships, support and involve all families in their children development and learning.
2. Use observation, documentation, and other appropriate assessment tools for: planning curriculum, identifying special needs, deepening understanding of child development, communicating with families and professionals and improving teaching practices.
3. Create an inviting and enriched environment that supports children optimal growth and development within the context of group living.
4. Design, implement and evaluate experiences that promote positive development and learning for all children.
5. Integrate and use a variety of respectful, responsive teaching strategies.
6. Demonstrate acceptance of all children and families, support cultural diversity, develop a program based on anti-biased principles and interact and relate to all persons in a responsive, respectful manner.
7. Display positive leadership qualities within an early childhood environment.
8. Use reflective and ethical practices in the classroom, advocate, access resources, practice appropriate verbal and non-verbal communication, listen and interact respectfully, use Standard English in writing and speaking.
9. Support the diverse ways in which children learn by interpreting and applying knowledge of child growth and development.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>Summer Semester</u>		
ECED-1010	Introduction to Early Childhood Education: Children's Development and Programs	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	7
<u>First Semester</u>		
ECED-1301	Language and Literacy in an Integrated Curriculum ¹	3
ECED-2300	Child Behavior and Guidance	3 6
<u>Second Semester</u>		
ECED-1860	Experience with Young Children in Early Childhood Settings	3
ECED-2401	Families, Communities & Schools	3
ECED-2600	CDA Professional Portfolio	1 7
PROGRAM TOTAL		20

¹ECED 1010 Can be taken concurrently

INFANT/TODDLER

Short-Term Certificate

The infant/toddler certificate provides students with a specialized focus on the unique strengths and needs of infants and toddlers. Students will study the comprehensive development of the young child, birth to three years, with a focus on understanding current brain research and best caregiving practices. The practicum component of the program will support the students as they transfer their learning to their work with young children. The program is available for early childhood educators, parents, administrators and health care professionals. The certificate is 19 credit hours, with 10 of the credit hours applying to the Associate of Applied Science in Early Childhood Education.

Program Manager - 216-987-2513

Program Admission Requirements:

- Program Application is required - contact Infant/Toddler Certificate Coordinator.
- High School Diploma/GED required.
- Complete ENG-1010 or ENG-101H with grade of "C" or higher.
- ECED-1010
- ECED-2500

Other Information:

- Applicants for Early Childhood Education must be able to sign the Ohio Department of Human Services Child Care Conviction Statement, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence (Sect. 5104.09 Ohio Revised Code) and that no child has been removed from their home (Sect.2151.353 Ohio Revised Code).
- Complete BCI check (see page 73) before enrolling in ECED-1550.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. **Developmental Knowledge.** Use comprehensive developmental knowledge and observation to design, implement and evaluate individual and group curriculum experiences for infants and toddlers.
2. **Environment.** Create respectful, healthy and safe physical and interpersonal environments for infants and toddlers, utilize responsive verbal and non-verbal caregiver strategies, select appropriate materials and follow sanitary guidelines.
3. **Family and Community.** Design experiences and utilize caregiver strategies that support family involvement and reciprocal relationships.
4. **Professionalism.** Perform professionally and ethically, use self reflection and knowledge, access resources and use Standard English in writing and speaking.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ECED-1010	Introduction to Early Childhood Education: Children's Development and Programs	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	—
		7
<u>Second Semester</u>		<u>Credits</u>
ECED-1540	Programming and Adjustments in Infant/Toddler Care	3
ECED-1550	Experiences with Infants	1
ECED-1850	Infants in Early Childhood Setting Practicum	2
ECED-2500	Infant/Toddler Development, Relationships, and Programs	3
		—
		9
<u>Summer Semester</u>		<u>Credits</u>
ECED-1570	Experience with Toddlers	1
ECED-1870	Toddlers in Early Childhood Setting Practicum	2
		3
	PROGRAM TOTAL	19

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Electrical/Electronic Engineering Technology

The ever-changing and increasing field of Electronic Technology is expanding the need for highly trained electronic technicians. These electronic technicians assist engineers and scientists in various electronic environments such as electronic instrumentation and control, aerospace research, electronic communications, process control, robotics and computer repair. Students completing the program gain the theoretical knowledge and skills that enable success in these various electronic fields.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1280 or higher
- Concentrations available: Electrical/Electronic Engineering Basic, Bio-Medical, Digital Communications

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate effective oral and written communication skills using appropriate technology.
2. Work independently and collaboratively as an effective member of a team to complete projects.
3. Identify, acquire, evaluate and ethically use technical information from multiple sources.
4. Exhibit ethical and social responsibilities and the need for lifelong learning in the engineering profession.

(continued on next page)

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Continued)


1. Conduct, analyze and interpret electronic experiments using electronic instrumentation standard measurements.
2. Apply knowledge of circuit analysis/design and use computer programming languages and software to solve a stated problem in analog or digital electronics.
3. Apply knowledge of physical sciences and practice of engineering standards to build, test, operate and maintain electrical and electronic systems.
4. Use algebra, trigonometry, or applied calculus to conduct experiments of electrical and electronic systems

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I ¹	2
EET-1170	Direct Current Circuits II ¹	2
EET-1180	Surface Mount Soldering	1
EET-1240	Digital Circuits/Microprocessors I	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I ²	
MATH-1280	Advanced Intermediate Algebra	<u>5</u>
		18

<u>Second Semester</u>		<u>Credits</u>
EET-1210	AC Electric Circuits	3
EET-2140	Digital Circuits/Microprocessors II	3
MATH-1510	Trigonometry ² ... OR	3
MATH-151H	Honors Trigonometry	
PHYS-1210	College Physics I	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	
ENG-2151	Technical Writing	-
		16

<u>Third Semester</u>		<u>Credits</u>
EET-2111	Industrial Electronics I	3
EET-2120	Electronics I	3
EET-2170	Signal Analysis	3
EET-2241	Microprocessor and Hardware Interfacing with C Programming	3
ITNT-2300	Networking Fundamentals	3
SPCH-1000	Fundamentals of Interpersonal Communication	<u>3</u>
		18

<u>Fourth Semester</u>		<u>Credits</u>
EET-2220	Electronics II	3
EET-2290	Electrical Design Project 	2
EET-2500	Instrumentation and Control	3
EET-xxxx	EET elective course	3
PHIL-2020	Ethics ... OR	3
PHIL-202H	Honors Ethics	
EET-2150	Printed Circuit Layout	<u>1</u>
		15
	PROGRAM TOTAL	67

ELECTIVES

Technical Electives Credits

Select from the following courses to fulfill EET elective requirements. Note: EET-1100 and EET-1150 are only open to students in the Youth Technology Academy program.

EET 1100	Introduction to Robotics	2
EET 1150	Basic Robotics with Math	2
EET 2520	Programmable Logic Controllers	3
EET 2700	Introduction to Hydrogen Fuel Cells and Alternative Energy	3
EET 2180	EET Applied Calculus	3
EET 2710	Solar Power, Energy Storage and Conversion	3

¹Consecutive eight week course.

²MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.

 Capstone course.

ELECTRONIC ENGINEERING TECHNICIAN

Certificate of Proficiency

The Electronic Engineering Technician certificate will provide the student basic knowledge of electrical/electronic theory which can assist in obtaining a credential documenting partial completion in coursework towards an associate's degree. The certificate program supports an associate's degree that will transfer via 2 + 2 to bachelor degree programs at Akron University, Cleveland State University and others.

Degree: Students may apply credits towards the Associate of Applied Science Degree in Electrical/Electronic Engineering Technology.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1020
- Eligibility for MATH-1280 or higher

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate skills supported by knowledge of elementary electronic circuits.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I	2
EET-1170	Direct Current Circuits II	2
EET-1180	Surface Mount Soldering	1
EET-1240	Digital Circuits/Microprocessors I	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I ²	
MATH-1280	Advanced Intermediate Algebra	<u>5</u>
		18

(continued on next page)

Program Sequences

ELECTRONIC ENGINEERING TECHNICIAN (Continued)

<u>Second Semester</u>		<u>Credits</u>
EET-1210	AC Electric Circuits	3
ITNT-2300	Networking Fundamentals	3
MATH-1510	Trigonometry ² ... OR	3
MATH-151H	Honors Trigonometry ²	
DEGR-xxxx	Select 1 elective from below list	<u>3</u>
		12
PROGRAM TOTAL		30

¹Consecutive eight week course.

²MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.

ELECTIVES

<u>Electives</u>	<u>Credits</u>	
A student is required to take one of the electives.		
BIO-1050	Human Biology	3
EET-2140	Digital Circuits/Microprocessors II	3
ENG-2151	Technical Writing	3
PHYS-1210	College Physics I	4

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Bio-Medical)

Associate of Applied Science degree in Electrical/Electronic Engineering Technology with a concentration in Bio-Medical Engineering

Technology has impacted biomedical equipment in the health field. Bio-medical engineering technicians are needed to perform safety checks, preventive maintenance, calibration and repair various bio-medical pieces of equipment. This general bio-medical equipment may involve infusion pumps, ventilators, patient monitors, electrosurgery units, defibrillators and other medical apparatus. Students completing the bio-medical program in electrical engineering technology will find jobs in hospitals, with medical equipment manufacturers or third-party service organizations associated with hospitals.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1280 or higher

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use organizational skills for time management, scheduling, and resource allocation to meet and satisfy organizational, quality and customer regulatory requirements.
2. Work independently and as a member of a diverse team while maintaining a high-level of professionalism.
3. Communicate in a clear, concise written and verbal manner to all levels of clinical and non-clinical staff.

4. Utilize information gathered through the troubleshooting process and develop and communicate an action plan to correct medical equipment, patient and user issues in a timely and efficient manner.
5. Perform all aspects of medical equipment support and service, including but not limited to inspection, repair, installation and networking in the healthcare industry.
6. Sit for the certified Bio Medical Equipment Technician Exam.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I ¹	2
EET-1170	Direct Current Circuits II ¹	2
EET-1180	Surface Mount Soldering	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra ²	<u>5</u>
		15

Second Semester

		<u>Credits</u>
BIO-1050	Human Biology	3
EET-1210	AC Electric Circuits	3
EET-1240	Digital Circuits/Microprocessors I	3
ENG-2151	Technical Writing	3
MATH-1510	Trigonometry or higher ² ... OR	3
MATH-151H	Honors Trigonometry ²	
PHYS-1210	College Physics I	<u>4</u>
		19

Third Semester

		<u>Credits</u>
EET-2111	Industrial Electronics I	3
EET-2120	Electronics I	3
EET-2170	Signal Analysis	3
EET-2400	Biomedical Instrumentation I	3
ITNT-2300	Networking Fundamentals	<u>3</u>
		15

Fourth Semester

		<u>Credits</u>
EET-2220	Electronics II	3
EET-2410	Biomedical Instrumentation II	3
EET-2490	Biomedical Design Project C	2
SPCH-1000	Fundamentals of Interpersonal Communication	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		<u>3</u>
		14

Summer Semester

		<u>Credits</u>
EET-2901	Clinical Internship	<u>3</u>
		3

PROGRAM TOTAL

66

¹Consecutive eight week course.

²MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.

C = Capstone course.

**ELECTRICAL/ELECTRONIC
ENGINEERING TECHNOLOGY
(Computer Networking Hardware)**

Associate of Applied Science degree in Electrical/Electronic Engineering Technology with a concentration in Computer Networking Hardware

Students will be prepared for careers dealing with network hardware systems analysis, planning and implementation. Students will gain the necessary skills to design, build and maintain small to medium size networks and manage network hardware systems. Skills acquired will assist students in preparing to take industry certification exams.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 or ENG-101H
- Eligibility for 1000-level MATH-1000 course

Other Information:

- Skills acquired prepare students to take industry certification exams.
- Certificate available in Computer Maintenance Technology (A+ Certification).


Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.
9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.
10. Apply knowledge of network hardware, the Open Systems Interconnection (OSI) Model, protocols, diagnostic tools and troubleshooting to assist in the design, selection of equipment, installation, configuration, testing and


optimization of an organization’s production network to ensure appropriate access and response time.

11. Use knowledge of network backup hardware and software to implement, maintain, and execute an organization disaster recovery plans.
12. Sit for A+ and CCNA certification exam.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
EET-1015	Introduction to Computer Maintenance and Repair	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1025	Information Technology Concepts for Programmers	3
		<u>9</u>
<u>First Semester</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
EET-1035	Operating Systems and Software for PC Technicians	4
EET-1055	Computer Hardware Support	4
ITNT-2300	Networking Fundamentals	<u>3</u>
		14
<u>Second Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
ITNT-2310	TCP/IP	3
ITNT-2320	Network Administration I	<u>3</u>
		12
<u>Third Semester</u>		<u>Credits</u>
EET-1302	Cisco I Basic Networking Technologies ¹	3
EET-1312	Cisco II Basic Routing and Switching ¹	3
ENG-2151	Technical Writing	3
MATH-1xxx	1000-level MATH course or higher	3
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	<u>3</u>
		15
<u>Fourth Semester</u>		<u>Credits</u>
EET-2302	Cisco III Intermediate Routing and Switching	3
EET-2312	Cisco IV Basic WAN Technologies	3
ITNT-2990	Networking Capstone 	3
	Natural Science (lecture)	<u>3</u>
		12
PROGRAM TOTAL		62

¹Consecutive eight week course.

 = Capstone course.

COMPUTER MAINTENANCE TECHNOLOGY

Certificate of Proficiency

Students will be prepared with the knowledge and skills essential for a career as an entry-level service technician. They will be prepared to service computers and peripherals by discovering how to install, configure, diagnose, repair, upgrade and maintain microcomputers. Skills acquired will assist students in preparing to take industry A+ Certification exams. A+ Certification is an industry recognized credential that distinguishes one as a knowledgeable service professional. Degree: Students may apply credits toward the Computer Networking, Hardware concentration in the Electric-Electronic Engineering degree or the Information Technology degree with a concentration in Networking Software.

Program Admission Requirements:

- High School Diploma/GED
- Complete IT-1010 or IT-101H

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.
9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.
10. Prepared to sit for A+ certification exam.

Suggested Semester Sequence

<u>Program Admissions</u>	<u>Requirements</u>	<u>Semester</u>	<u>Credits</u>
IT-1010	Introduction to Microcomputer Applications ¹ ... OR		3
IT-101H	Honors Introduction to Microcomputer Applications		3
			3
<u>Summer Semester</u>			<u>Credits</u>
EET-1015	Introduction to Computer Maintenance and Repair		3
IT-1020	Information Technology Concepts ... OR		2
IT-1025	Information Technology Concepts for Programmers		3
			6
<u>First Semester</u>			<u>Credits</u>
EET-1035	Operating Systems and Software for PC Technicians		4
EET-1055	Computer Hardware Support		4
ITNT-2300	Networking Fundamentals		3
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		3
			14
<u>Second Semester</u>			<u>Credits</u>
ITNT-2310	TCP/IP		3
ITNT-2320	Network Administration I		3
MATH-1xxx	1000-level MATH course or higher		3
BADM-1050	Professional Success Strategy		3
			12
PROGRAM TOTAL			35

¹Credit-by-exam is available through the IT department to meet this requirement. Written departmental approval from the IT department required.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Digital Communications, Including RF, Radio Frequency)

Associate of Applied Science degree in Electrical/Electronic Engineering Technology with a concentration in Digital Communications, Including RF, Radio Frequency

Graduates of the Digital Communications concentration in the Electronic Engineering Technology program can work as technical specialists in the broad and diverse field of communications, in such areas as installation, operation and maintenance of (principally) digital and analog communications systems. The program emphasizes both theory and application and consists of course work and lab work in basic electronic circuits, digital and microprocessor systems, networking, analog and digital communications circuits and system and Communications media (fiber optics, broadband cable, twisted pair and microwave systems.); With several additional courses, concentration majors can transfer to some universities in the 2+2 program (EET-2241 Microprocessor and Hardware Interfacing with C Programming Language and EET-2180 EET Applied Calculus).

With departmental approval regarding prerequisites and/or prerequisite-based work experience, a candidate can seek an award by taking and passing the four concentration courses. These courses include EET-2170 Signal Analysis, EET-2131 Digital Communications Fundamentals, EET-2231 Wired and Wireless Communications and EET-2591 Communications Design Project.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010 College Composition
- Eligibility for MATH-1280 Intermediate Algebra with "C" or higher, or appropriate placement test score.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate effective oral and written communications using appropriate technology and terminology to various audiences.
2. Work independently and as an effective member of a team to complete projects.
3. Explain professional, ethical and social responsibilities and the need for lifelong learning in the engineering profession.
4. Apply current knowledge of math, science, engineering, fiber, radio frequency and networking technology to build/modify troubleshoot, install, operate and maintain equipment using schematic and/or mechanical drawings, instrumentation, productivity tools, safety and other appropriate standards.
5. Sit for certification(s).

Suggested Semester Sequence

First Semester		Credits
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I ¹	2
EET-1170	Direct Current Circuits II ¹	2
EET-1180	Surface Mount Soldering	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra ²	5
		15

Second Semester		Credits
EET-1210	AC Electric Circuits	3
EET-1240	Digital Circuits/Microprocessors I	3
ITNT-2300	Networking Fundamentals	3
MATH-1510	Trigonometry ² ... OR	3
MATH-151H	Honors Trigonometry ²	
PHYS-1210	College Physics I	4
		16

Third Semester		Credits
EET-2120	Electronics I	3
EET-2131	Digital Communication Fundamentals	3
EET-2140	Digital Circuits/Microprocessors II	3
EET-2170	Signal Analysis	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	
ENG-2151	Technical Writing	
ITNT-2310	TCP/IP	3
		18

Fourth Semester		Credits
EET-2220	Electronics II	3
EET-2231	Wired and Wireless Communications	3
EET-2591	Communications Design Project	2
PHIL-2020	Ethics ... OR	3
PHIL-202H	Honors Ethics	
PHYS-1220	College Physics II	4
		15
PROGRAM TOTAL		64

¹Consecutive eight week course.

²MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.

 = Capstone course.

ELECTIVES		Credits
The below additional courses are highly recommended for 2+2 transfer students.		
EET 2180	EET Applied Calculus	3
EET 2241	Microprocessor and Hardware Interfacing with C Programming	3

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Telecommunications)

This program has been re-named Electrical/Electronic Engineering Technology (Digital Communications, Including RF, Radio Frequency), see above.

ELECTRONEURODIAGNOSTIC TECHNOLOGY

Associate of Applied Science degree in Electroneurodiagnostic Technology

The Associate of Applied Science degree prepares the student for an entry-level position as an Electroneurodiagnostic Technician for employment in hospitals, doctors' offices and clinics.

Electroneurodiagnostic technology is a profession devoted to the recording and study of electrical activity of the brain and nervous system. Used for medical evaluation and research, it includes procedures that assess the function of the nervous system. Technologists record electrical activity arising primarily from the brain, spinal cord and peripheral nerves. This program consists of on-campus didactic and laboratory instruction, as well as off-campus clinical experiences at our affiliated health care institutions.

Program Manager – 216-987-5654

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H or ENG-1020 with "C" or higher.
- Complete MA-1020 with "C" or higher
- Complete the following: BIO-1100; or CHEM-1010 and 1020; and BIO-2331 ("C" grade or higher in each). It is recommended that BIO-2341 be completed prior to entering the program.
- Complete MATH-1141 or higher. MATH-1820/2820 may not be used to meet this requirement.
- GPA required: 2.0 admissions/core courses requirements, 2.5. overall.

Other Information:

- 16 students accepted per year.
- TOEFL Test. Applicants who are non-native speakers of English as required to have completed the Test of English as a Foreign Language (TOEFL) with a minimum internet based test (iBT) score of 24 in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program's professional technical standards for written and verbal communication skills. Preparation for the test is highly recommended. Cuyahoga Community College offers a preparation course for the TOEFL. Preparation for scheduling and costs incurred for the TOEFL are the sole responsibility of the student. Visit www.ets.org for more information on the test. This test must be taken even if you have become an American citizen. Students should consider taking the following coursework to assist in attaining the minimal score: ESL Speaking English III and ESL: TOEFL Preparation.
- Criminal background check required (see page 73).
- Clinical observation visit required (see details in application packet).
- Pre-admission status may be offered if admissions requirements are incomplete; however, no student will be admitted into the program until all prerequisites and observation are successfully completed. Contact Program Manager at 216-987-5654.
- Core courses may be repeated only once to improve a grade below "C".

- Courses used as prerequisites, core courses, as well as all Electroneurodiagnostic specialty courses, MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, core and specialty courses will NOT be accepted to meet program graduation requirements.
- Candidates will be required to present documentation of good health verified by a physician examination and immunizations prior to being granted permission to enter clinical training and CPR certification.
- Accepted applicants must attend a group information session prior to Fall Semester.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Effectively communicate to patients and families when explaining various Electroneurodiagnostic procedures.
2. Manage and budget time to perform various Electroneurodiagnostic procedures according to current guidelines.
3. Listen, speak and contribute with team members while performing various Electroneurodiagnostic procedures in different clinical settings.
4. Recognize technical and clinical changes during data acquisition and provide appropriate documentation.
5. Demonstrate knowledge and performance of all Electroneurodiagnostic testing procedures.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
BIO-1100	Introduction to Biological Chemistry ¹	3
BIO-2331	Anatomy and Physiology I ²	4
END-1300	Introduction to Electroneurodiagnostic Technology	2
END-1350	Introduction to Electroencephalography (EEG)	3
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
MA-1020	Medical Terminology I	<u>3</u>
		18
<u>Second Semester</u>		
BIO-2341	Anatomy and Physiology II ²	4
END-1450	Intermediate Electroencephalography (EEG)	3
END-1500	Basic Evoked Potentials	3
END-1910	END Directed Practice I	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		17
<u>Summer Semester</u>		
END-2400	Intraoperative Monitoring for Electroneurodiagnostic Technologists	2
END-2450	Neonatal/Pediatric Electroneurodiagnostic	3
END-2911	END Directed Practice II	<u>2</u>
		7

ELECTRONEURODIAGNOSTIC TECHNOLOGY (Continued)

<u>Third Semester</u>		<u>Credits</u>
END-2300	Nerve Conduction Studies	3
END-2411	Neurophysiology of Electroencephalography/ Sleep Disorders ³	3
END-2930	END Directed Practice IV	2
PHIL-2050	Bioethics	3
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	3
		14
<u>Fourth Semester</u>		<u>Credits</u>
END-2350	Fundamentals of Polysomnography ⁴ ... OR	4
END-2320	Intermediate Nerve Conduction Studies	3
END-2920	END Directed Practice III	4
END-2990	Electroneurodiagnostic Capstone C	1
Communication...	(See AAS Degree requirements)	3
		11 - 12
PROGRAM TOTAL		67 - 68

¹CHEM-1010 and 1020 may be taken in place of BIO-1100.
¹Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100. BIO-233A and BIO-233B may be taken in place of BIO-2331.
³END 1440 will be accepted in place of END 2411.
⁴END 1410, 1421, 142L, & 1430 together will be accepted in place of END 2350.

C = Capstone course.

EMERGENCY MEDICAL TECHNOLOGY

Associate of Applied Science degree in Emergency Medical Technology

This program is designed for individuals providing emergency medical service to the community. Three levels of training are available: EMT-B, EMT-P and Associate of Applied Science degree in Emergency Medical Technology. Certification is provided by the National Registry of Emergency Medical Technicians (NREMT) and the Ohio Dept. of Public Safety, Division of EMS. The graduate may function on the levels required by Ohio Law to provide basic and advanced life support under the direction of a physician, as well as to provide supervision of operations in an emergency service. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences. State of Ohio EMS Accreditation number: 312 .

Program Manager – 216-987-4449

Program Admission Requirements Application may be submitted to the Health Careers Enrollment Center after meeting the English and Math requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH 1000 level or higher with "C" or higher.
- GPA required: 2.0 admissions requirements, 2.0 overall
- One year EMT-Basic experience preferred for entry into EMT-P.

- EMT-Basic Ohio certification prior to first day of EMT-2330 Paramedic Theory I.
- Signed felon-misdemeanor statement.
- EMT Basic certification and Program Manager approval for all courses, except EMT-1310 CPR and EMT-1400 Paramedic Success.

Other Information:

- 60 students accepted per year.
- Criminal background check required (see page 73).
- EMT-Basic available at Eastern, Metropolitan, Western & Westshore; EMT-P available at Eastern, Metropolitan, Western, Westshore and offsite locations.
- Courses offered as listed in schedule book. Many are flexible; contact Program Manager for information – 216-987-4449.
- Must be 18 years of age or 17 years of age and high school senior for EMT-Basic.
- All EMT classes must be completed with "C" or higher.
- Clinical components of all classes must be completed within one year.
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure or Ohio Revised/ Administrative Code 4765.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize various non-verbal, verbal, written and electronic communication methods to interact with a diverse group of populations.
2. Exhibit professional, ethical and compassionate behavior when interacting with diverse groups of patients and their families, health care professionals, and community members.
3. Use patient assessment skills to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient, and establish the priority of interventions needed to improve the patient's outcome within a Paramedic's scope of practice.
4. Demonstrate skill proficiency in pre-hospital and inter-facility assessments and treatments using advanced medical techniques and equipment available within a Paramedic's scope of practice.
5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.
6. Use strategic management and ethical decision making skills to lead, schedule, and staff Emergency Medical Services (EMS) Systems.
7. Effectively resolve conflict and solve problems, and utilize personal organizational skills to excel in a fast-paced, dynamic work setting.
8. Apply critical thinking skills to identify and adapt to potential changes within the dynamic field of Emergency Medical Services.


(continued on next page)

Program Sequences

EMERGENCY MEDICAL TECHNOLOGY (Continued)

9. Value wellness and participate in activities to promote sound physical, psychological, and spiritual health in themselves, patients and their families, health care professionals and community members.
10. Sit for the National Registry of Emergency Medical Technician Basic Exam, National Registry of EMTs Paramedic Certification Exam.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ¹	4
EMT-1302	Emergency Medical Technician - Basic	6
EMT-130L	EMT Basic Practical Lab	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
HTEC-1120	Critical Thinking in Healthcare	1
		15
<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
EMT-1320	Heavy Rescue ² ... OR	2
EMT-xxxx	EMT elective course ³	2
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	3
MATH-1xxx	1000-level MATH course or higher ⁴	3
MA-1020	Medical Terminology I	3
UST-1010	Introduction to Urban Studies	3
		18
<u>Third Semester</u>		<u>Credits</u>
EMT-2330	Paramedic Theory I ⁵	6
EMT-2350	Paramedic Theory III ⁵	6
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	3
		15
<u>Fourth Semester</u>		<u>Credits</u>
EMT-2340	Paramedic Theory II ⁵	6
EMT-2360	Paramedic Theory IV ⁵	6
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	4
		16
<u>Summer Semester</u>		<u>Credits</u>
EMT-2370	Paramedic Theory V 	5
		5
	PROGRAM TOTAL	69
ELECTIVES		
<u>Additional Recommended Elective</u>		<u>Credits</u>
EMT department strongly recommends students take EMT-1330 Defensive Driving, in addition to required coursework.		
EMT 1330	Defensive Driving - EMT	1

¹Requires passing Science Assessment Test or prerequisite BIO 1100.


²Students who successfully complete Tri-C's Fire Academy will receive credit for this course. Students not planning to pursue

Firefighter certification may use other approved courses to meet this requirement. Requirement may be waived/substituted with written permission from department for those who have other advanced training such as military training, police academy training, or experience working as a firefighter/paramedic.

³For EMT-Basic ST certificate students, EMT-1400 Paramedic Success meets this requirement

⁴Nursing Transfer; CSU BA in Public Safety Management (PSM) Transfer consider MATH-1250 or MATH-1410.

⁵Consecutive eight week course.

 Capstone course.

EMERGENCY MEDICAL TECHNICIAN-BASIC

Short-Term Certificate

This program is designed for individuals interested in pursuing a career as an Emergency Medical Technician. It prepares students for entry level positions with ambulance and Emergency Medical Services (EMS). As many EMS services are a component of fire departments, it is also important for those pursuing a career as a firefighter. Students who successfully complete this program are eligible to take the National Registry of EMT Basic examination. Successful completion of this examination is necessary for state of Ohio EMT-Basic certification. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences.

Program Manager - 216-987-4449

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Submit application at least two weeks before EMT-1302/130L EMT Basic class begins.
- Must be 18 years old or 17 years old and a high school senior to enroll in EMT-1302/130L.
- Eligibility for ENG-0990.
- Eligibility for MATH-0950.

Other Information:

- 215 students accepted per year.
- Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.
- EMT-Basic available at Eastern, Metropolitan, Western and Westshore Campuses.
- All EMT classes must be completed with "C" or higher.
- Criminal background check required (see page 73).
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure of Ohio Revised / Administrative Code 4765.

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EMERGENCY MEDICAL TECHNICIAN-BASIC (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use correct medical terminology when communicating with health care professionals regarding patient conditions and to completely and accurately document patient care information that meets federal, state and organizational requirements.
2. Exhibit professional, ethical and compassionate behavior when interacting with diverse groups of patients and their families, health care professionals, and community members.
3. Apply knowledge of anatomy, physiology, medicolegal and ethical issues, basic patient assessment skills, and basic medical equipment to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient and establish the priority of interventions needed to improve the patient's outcome within the EMT Basic level's scope of practice.
4. Demonstrate skill proficiency in pre-hospital assessments and treatments using basic medical techniques and equipment available within the EMT Basic level's scope of practice.
5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.
6. Use tactical management, critical thinking and ethical decision making skills to lead and operate an Emergency Medical Services (EMS) Unit.
7. Identify stress within myself and co-workers and use appropriate stress management techniques to ensure physical and emotional health.
8. Sit for the National Registry of Emergency Medical Technician Basic Exam.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
EMT-1302	Emergency Medical Technician - Basic	6
EMT-130L	EMT Basic Practical Lab	1
EMT-1400	Paramedic Success ¹	<u>4</u> 11
PROGRAM TOTAL		11

¹BIO-2331 and BIO-2341 will be accepted in place of EMT-1400. BIO-2331 and BIO-2341 required for the AAS in Emergency Medical Technology. Note: BIO-2330 and BIO-2340 together taken prior to Fall 2011 will also be accepted in place of EMT-1400.

PARAMEDIC

Short-Term Certificate

This program is designed for Emergency Medical Technicians interested in pursuing Paramedic certification. It prepares students to advance their career with ambulance and Emergency Medical Services (EMS). As many EMS services are a component of fire departments, it is also important for those pursuing a career as a firefighter. Students who successfully complete this program are eligible to take the National Registry of EMT Paramedic examination. Successful completion of this examination is necessary for State of Ohio Paramedic certification. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences.

Program Manager - 216-987-4449

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED Recommended
- Eligibility for ENG-1010 College Composition I.
- Eligibility for MATH-0980 Intensified Beginning Algebra.
- Candidates must have completed the EMT Basic Short Term Certificate. Contact the Health Careers Enrollment Center (216-987-4247) for comprehensive admissions information and an application packet.
- GPA required: 2.00 certificate courses
- One year EMT Basic experience recommended for entry into EMT Paramedic
- EMT-Basic Ohio Certification prior to first day of EMT-2330.
- One year EMT-Basic experience recommended for entry into EMT Paramedic.
- Signed felon-misdemeanor statement.
- Certain clinical sites require drug screen.

Other Information:

- All EMT classes must be completed with "C" or higher.
- Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.
- EMT-P available at Eastern, Metropolitan, Western, Westshore Campuses and off-site locations.
- All EMT classes must be completed with "C" or higher.
- Criminal background check required (see page 73).
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure of Ohio Revised / Administrative Code 4765.
- Program Manager: 216-987-4449.

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PARAMEDIC (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use correct medical terminology when communicating with health care professionals regarding patient conditions and to completely and accurately document patient care information that meets federal, state and organizational requirements.
2. Exhibit professional, ethical and compassionate behavior when interacting with diverse groups of patients and their families, health care professionals, and community members.
3. Use patient assessment skills to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient and establish the priority of interventions needed to improve the patient's outcome within Paramedic's scope of practice.
4. Demonstrate skill proficiency in pre-hospital assessments and treatments using advanced medical techniques and equipment available within the Paramedic's scope of practice.
5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.
6. Use tactical management, critical thinking and ethical decision making skills to lead and operate an Emergency Medical Services (EMS) Unit.
7. Identify stress within oneself and co-workers and use appropriate stress management techniques to ensure physical and emotional health.
8. Prepared to sit for the National Registry of EMTs Paramedic Certification Exam.

Suggested Semester Sequence

<u>Program Admissions Requirements Semester</u>		<u>Credits</u>
EMT-1400	Paramedic Success ¹	<u>4</u> 4
 <u>First Semester</u>		 <u>Credits</u>
EMT-2330	Paramedic Theory I ^{2,3}	6
EMT-2350	Paramedic Theory III ³	<u>6</u> 12
 <u>Second Semester</u>		 <u>Credits</u>
EMT-2340	Paramedic Theory II ³	6
EMT-2360	Paramedic Theory IV ³	<u>6</u> 12
 <u>Summer Semester</u>		 <u>Credits</u>
EMT-2370	Paramedic Theory V	<u>5</u> 5
 PROGRAM TOTAL		 33

¹BIO-2331 and BIO-2341 will be accepted in place of EMT-1400. BIO-2331 and BIO-2341 required for the AAS in Emergency Medical Technology. Note: BIO-2330 and BIO-2340 together taken prior to Fall 2011 will also be accepted in place of EMT-1400.

²Requires program application acceptance; Departmental approval;

³Consecutive 8 week courses

ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY

Associate of Applied Science degree in Environmental, Health and Safety Technology

This program prepares students for a variety of careers in the environmental, health and safety technology (EHST) field. Students who enjoy working outdoors can choose the Environmental Field Technology option, which emphasizes skills in air monitoring; water, ground water and soil sampling; chemical emergency response actions; and generally evaluating and cleaning up environmental contamination. The EHST Management option focuses on skills for compliance with Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and Department of Transportation (DOT) regulations, whether in private industry, government or the consulting field. Interested students must complete a program application and are encouraged to meet with the Program Manager for program course sequence. Upon successful completion of the EHST program pre-requisite courses, the student will be accepted into the EHST program.

Program Manager – 216-987-2236

Program Admission Requirements:

- Interested students are required to complete a program application and are encouraged to meet with the Program Manager for program course sequence. Upon successful completion of the EHST program pre-requisite courses, the student will be accepted into the EHST program.
- High School Diploma/GED
- Eligibility for ENG-1010 except with departmental permission.
- Eligibility for MATH-1060 except with departmental permission

Other Information:

- Interview with Program Manager strongly recommended.

Program Outcomes: The Associate of Applied Science degree and the Post-Degree Professional Certificate program are designed to prepare students to demonstrate the following program outcomes:

1. Effectively and efficiently manage responsibilities and tasks.
2. Recognize, understand, and assure compliance with relevant regulations.
3. Display effective oral and written communication skills and listening skills.
4. Practice and maintain ethical and professional standards and behavior.

(continued on next page)

ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY (Continued)

5. Select, prepare, use and maintain equipment appropriately, and apply computer software to information collection, data management, and written communications.
6. Work safely, identify and document relevant environmental conditions using general science principles, and apply principles of quality to daily work tasks.
7. React appropriately to unanticipated or changing conditions.
8. Communicate technical and procedural information to others.
9. Take ownership of job responsibilities.

Suggested Semester Sequence

Note: Select option (a) or (b) before beginning this program.

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SPCH-1010	Fundamentals of Speech Communication...OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
MATH-1xxx	1000-level MATH course or higher	3
EHST-1301	Introduction to Environmental Technology	3
		15
<u>Second Semester</u>		<u>Credits</u>
BIO-1060	Environment, Ecology, and Evolution 1...AND	3
BIO-106L	Environment, Ecology, and Evolution Laboratory ... OR	1
BIO-1050	Human Biology 2 ... AND	3
BIO-105L	Human Biology Laboratory	1
CHEM-1010	Introduction to Inorganic Chemistry 3 ...OR	4
CHEM-101H	Honors Introduction to Inorganic Chemistry	
EHST-1310	Introduction to Environmental Law	4
EHST-1350	Health and Safety in the Workplace	3
		15
<u>Third Semester</u>		<u>Credits</u>
EHST-2220	EH&S Management Systems (a) ... OR	2
EHST-1330	Hazardous Waste Operations and Emergency Response (b)	2
EHST-2351	Emergency Planning and Response (a)...AND	2
EHST-2380	Risk Assessment (a) ... OR	2
ESCI-1410	Physical Geology (b) ... AND	3
ESCI-141L	Laboratory in Physical Geology (b)	1
HLTH-1230	Standard First Aid and Personal Safety	1
EHST-2341	Hazardous Materials Transportation	2
EHST-2361	Environmental Sampling and Analysis	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		16

<u>Fourth Semester</u>		<u>Credits</u>
BADM-2010	Business Communications (a) ... OR	2-3
BADM-201H	Honors Business Communications (a) ... OR	
EHST-2xxx	EHST elective course 4 (b)	
ENG-2151	Technical Writing	3
EHST-2390	Solid and Hazardous Waste Management	3
EHST-2940	Field Experience	1 - 2
EHST-2991	Professional Practice C	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		15 - 17
PROGRAM TOTAL		61 - 63

Program total for Option A = 62-63
 Program total for Option B = 61-62

OPTIONS

(a) Option a (Environmental, Health and Safety Management)

		<u>Credits</u>
BADM-2010	Business Communications OR	3
BADM-201H	Honors Business Communications	
EHST 2220	EH&S Management Systems	2
EHST 2351	Emergency Planning and Response	2
EHST 2380	Risk Assessment	2

(b) Option b (Environmental Field Technology)

		<u>Credits</u>
EHST 1330	Hazardous Waste Operations and Emergency Response	2
EHST 2xxx	EHST elective course	2
ESCI 1410	Physical Geology	3
ESCI 141L	Laboratory in Physical Geology	1

¹BIO 1060/106L recommended for students in Option B.

²BIO 1050/105L recommended for students in Option A.

³Any higher level CHEM course will be accepted in place of CHEM-1010 requirement except CHEM-1800-1819/2800-2819 & 1820/2820.

⁴EHST elective course must have written departmental approval before registering for course.

C = Capstone course.

ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY

Post-Degree Professional Certificate

The Environmental, Health and Safety Technology Certificate Degree Program is a course of study designed to provide students with a well-rounded education in EH&S regulatory compliance and EH&S management. It is intended for those currently working in the EH&S field seeking to enhance and broaden their knowledge, or those working in other fields desiring coursework to help change or modify their careers. Students must already possess a college degree (associate or higher), although the degree may be in any subject area. Students entering the program must complete a program application and are encouraged to consult with the Program Manager to develop a course completion plan compatible with the student's professional goals and program completion timeframe. Degree: Students may apply course credits toward the Environmental, Health and Safety Technology Associate Degree.

Program Manager – 216-987-2236

Program Admissions Requirements:

- Student applicant must complete a program application and is strongly encouraged to meet with the EHST Program Manager before enrolling in any EHST course.
- Applicant must have already completed an associate degree or higher from an accredited college or university. The degree may be in any subject area.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Effectively and efficiently manage responsibilities and tasks.
2. Recognize, understand, and assure compliance with relevant regulations.
3. Display effective oral and written communication skills and listening skills.
4. Practice and maintain ethical and professional standards and behavior.
5. Apply computer software to information collection, data management, and written communications.
6. Work safely, identify and document relevant environmental conditions using general science principles, and apply principles of quality to daily work tasks.
7. React appropriately to unanticipated or changing conditions.
8. Communicate technical and procedural information to others.
9. Take ownership of job responsibilities.

Suggested Semester Sequence

First Semester		Credits
EHST-1301	Introduction to Environmental Technology	3
EHST-1310	Introduction to Environmental Law	4
EHST-1350	Health and Safety in the Workplace	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		16

Second Semester		Credits
EHST-2220	EH&S Management Systems	2
EHST-2341	Hazardous Materials Transportation	2
EHST-2351	Emergency Planning and Response	2
EHST-2380	Risk Assessment	2
EHST-2390	Solid and Hazardous Waste Management	3
EHST-2991	Professional Practice	3
		14
	PROGRAM TOTAL	30

FIRE TECHNOLOGY

Associate of Applied Science degree in Fire Technology

This curriculum offers a balanced and broad education to students who plan to enter fire service as a career. It also helps active firefighters upgrade themselves for advancement within the service. Included are such specialized areas of instruction as fire prevention, investigation, protection systems and municipal public relations.

Program Admissions Requirements:

- Successful completion of Fire Academy and appropriate state certification.

Other Information:

- Students who successfully complete the Tri-C Fire Training Academy will receive credit for the following courses towards this program: EMT-1310, EMT-1320, EMT-1330, FIRE-1100, FIRE-1200, FIRE-1500, and FIRE-2321.
- Students who have State Certification in Firefighting can apply for comparable credit. Contact Mike Boyko at 216-987-5037.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and apply principles and practices of leadership and management in all aspects of departmental operations.
2. Exhibit professional conduct that follows department, city, state and federal regulations, and promote sound physical, psychological, spiritual health and safety at all times.
3. Communicate/educate verbally and in writing using appropriate technology with diverse colleagues, public administration and the community to provide direction and information about an event that meets the goals/objectives of the organization.
4. Work with coworkers, internal and external agencies, and the community to resolve conflicts that achieve a common goal while respecting diverse beliefs and opinions.

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FIRE TECHNOLOGY (Continued)

5. Apply knowledge of patient assessment and treatment to manage response personnel and be able to assess and treat medical emergencies within scope of practice.
6. Respond to an event, evaluate the situation, and implement appropriate strategies and tactics to save lives, protect property and the environment, and mitigate the hazards in a safe and efficient manner.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
EMT-1310	Cardiopulmonary Resuscitation ¹	1
EMT-1320	Heavy Rescue ¹	2
EMT-1330	Defensive Driving - EMT ¹	1
FIRE-1100	Principles of Emergency Services ¹	3
FIRE-1200	Principles of Fire and Emergency Services Safety and Survival ¹	2
FIRE-1500	Fire Behavior and Combustion ¹	2
FIRE-2321	Fire Protection Systems ¹	2
		13
<u>Second Semester</u>		<u>Credits</u>
CHEM-1010	Introduction to Inorganic Chemistry ... OR	4
CHEM-101H	Honors Introduction to Inorganic Chemistry	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
FIRE-1600	Fire Prevention	3
FIRE-2351	Building Construction for Fire Protection	3
FIRE-2401	Fire Protection Hydraulics and Water Supply	3
MATH-1270	Intermediate Algebra or higher ²	4
		20
<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
FIRE-1300	Fire Tactics and Strategy	3
FIRE-1400	Chemistry of Hazardous Materials	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	
		14
<u>Fourth Semester</u>		<u>Credits</u>
FIRE-2600	Fire Investigation Methods	3
FIRE-2720	Fire Service Training and Public Relations	2
FIRE-2730	Managing Fire Services	3
FIRE-2990	Fire Technology Professional Study C	1
POL-1020	State and Local Government	3
SPCH-1000	Fundamentals of Interpersonal Communication 3	3
		15
	PROGRAM TOTAL	62

¹Students will receive credit for these courses upon successful completion of the Fire Training Academy.

²MATH-1800-1820 may not be used to meet this requirement.

C = Capstone course.

HEALTH INFORMATION MANAGEMENT TECHNOLOGY

Associate of Applied Science degree in Health Information Management Technology

The Health Information Management Technology (HIM) program prepares graduates who can identify and use a variety of health information resources and technologies to accomplish the objectives of diverse practice environments. In general, these individuals may perform tasks related to the use, analysis, validation, presentation, abstracting, coding, storage, security, retrieval, quality measurement and control of health care data. Their task responsibility may also include supervision of personnel. The program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), a division of the American Health Information Management Association (AHIMA). The goal of the Health Information Management Technology Program is to provide an educational experience within the framework of professional standards. Graduates of the program may be eligible to take the national certification examination to become a Registered Health Information Technician (RHIT). Upon passing the examination, an individual is permitted to use the credential RHIT behind his/her last name. Earning a credential validates your competence as an HIM professional to employers and the public.

Program Manager - 216-987-4456

Program Admission Requirements: Students must request an application packet from the health Careers Enrollment Center 216-987-4247 for comprehensive admissions and program information:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "B" or higher.
- Eligibility for MATH-1060
- Complete the following:
 BIO-2331 (or 2330) with "B" grade or higher
 IT-1010 (or CS-1020) with "B" grade or higher
 MA-1020 with "B" grade or higher
 HTEC-1120 (or PHIL-1000) with "B" grade or higher
- GPA required: 3.00 admission requirements. 2.50 overall.
- Biology courses are acceptable for HIM program admittance for 5 years. HIM courses expire after one year of absence from the program and will need to be repeated if student requests readmittance to the degree program.
- Coding courses expire after one year.
- Students who withdraw from or leave the Health Information Management Technology Program for any amount of time will have to reapply for admission and will be required to repeat all HIM courses previously taken.
- Non-native English speaking applicants must demonstrate competence in verbal, written and oral communication skills. Applicants whose native language is not English and test into the ESL series must take the TOEFL exam at www.toefl.org and score at least a 21 in Reading and Listening, a 23 in Writing, and a 25 in Speaking.

Other Information:

- 30 students accepted per year.
- Admissions requirements may only be repeated once to improve a grade.
- Upon acceptance into program and prior to clinical practice, student must submit evidence of good health.
- Criminal background check required (see page 73).

(continued on next page)

Program Sequences

HEALTH INFORMATION MANAGEMENT TECHNOLOGY (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.
- Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.
- Conduct yourself ethically and professionally according to the AHIMA code of ethics and standards of practice.
- Use a variety of techniques to problem solve and arrive at best outcome.
- Apply regulatory and accreditation standards to identify and support documentation compliance.
- Apply hospital policies, federal regulations and/ or state statutes in the release and management of protected health information (PHI).
- Identify areas of quality assurance/Continuous Quality Improvement (CQI) that relate to risk management, utilization review and documentation compliance.
- Apply skills to find, build, research, manage and report both electronic and paper data.
- Employ auditing skills and methodologies to insure compliance, accuracy, completeness, regulations, policies and procedures, and protocols in the health care delivery system.
- Utilize knowledge and skills of anatomy & physiology, medical terminology, pharmacology, pathophysiology, code sets, reimbursement methodologies and regulations to analyze clinical documentation to accurately and thoroughly assign respective code sets for entity's database and third party reimbursement.
- Apply skills to find, build, restart and manage the system.
- Apply management skills for the daily operations of HIM department related entity.

<u>Program</u>	<u>Admissions Requirements</u>	<u>Semester</u>	<u>Credits</u>
BIO-2331	Anatomy and Physiology I		4
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		3
IT-1010	Introduction to Microcomputer Applications ... OR		3
IT-101H	Honors Introduction to Microcomputer Applications		3
MA-1020	Medical Terminology I		3
HTEC-1120	Critical Thinking in Healthcare ¹		<u>1</u>
			14

<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
HIM-1301	Introduction to Health Information Management	3
HIM-1311	Legal Aspects of Health Care	3
HIM-1401	Systems in Healthcare Delivery	2
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
BIO-2600	Pathophysiology	3
HIM-1411	Healthcare Statistical Applications & Research	2
HIM-1423	Health Data Documentation, Sources and Classification Systems	3
HIM-1431	Healthcare Informatics and Information Management	3
HTEC-1610	Introduction to Pharmacology	2
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		16

<u>Third Semester</u>		<u>Credits</u>
HIM-2130	Coding with CPT (Current Procedural Terminology)	2
HIM-2160	Coding with ICD-10-CM	2
HIM-2200	Project Management for the Health Information Management Professional	2
HIM-2312	Quality Assessment and Improvement	3
HIM-2430	Medical Reimbursement Methodologies	2
HIM-2851	Practicum I C	<u>3</u>
		14

<u>Fourth Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
HIM-2260	Coding with ICD-10-PCS	2
HIM-2401	Intermediate Coding	2
HIM-2410	Management Practices in Health Information	2
HIM-2440	Fundamentals of Healthcare Workflow and Process Analysis C	2
SPCH-1000	Fundamentals of Interpersonal Communication ... OR	3
SPCH-1010	Fundamentals of Speech Communication...OR	
SPCH-101H	Honors Fundamentals of Speech Communication	-
		14

PROGRAM TOTAL 73

¹PHIL-1000 may be taken in place of HTEC-1120.

C = Capstone course.

HEALTH UNIT COORDINATOR

Short-Term Certificate

A Health Unit Coordinator (HUC) is an essential member of a health care team with nonclinical responsibilities who manages all nonclinical tasks on hospital nursing units. Responsibilities include coordinating the activities of the nursing staff, doctors, hospital diagnostic departments, patients, and the visitors to the nursing unit. Health Unit Coordinators are skilled in transcribing physician orders for patient treatment, preparing patient charts, maintaining statistical reports, and much more. It is one of the more key positions on the nursing unit. Health Unit Coordinators may also be employed in emergency departments, doctor's offices, clinics, ambulatory surgery centers and long-term care facilities to assist the nursing staff with clerical duties related to patients health records' and coordination of treatment.

Program Manager - 216-987-4456

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- Completion of ENG-1010 English Composition I.
- Completion of MA-1020 Medical Terminology I.
- Completion of IT-1010 Introduction to Microcomputer Applications.
- Time limit on admissions requirements prior to application is two years.
- GPA required: 2.0.
- Number of students accepted per year is based on openings available in the course cap as offered for Health Unit Coordinator (HIM-1060).
- MA-1020 Medical Terminology I and MA-2010 Medical Terminology II must be completed within three years of program completion if not using Medical Terminology in current work environment.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.
2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.
3. Conduct yourself ethically and professionally according to the National Association of Health Unit Coordinators (NAHUC) code of ethics and standards of practice.
4. Use a variety of techniques to problem solve and arrive at best outcome.
5. Follow regulatory, legal and accreditation standards when performing day to day activities.
6. Find, file/enter and maintain the integrity of patient records both paper and electronic format.
7. Use word processing, spreadsheets, email and health care software to coordinate patient care services.
8. Coordinate the daily operation of the Health Care Unit.

		Suggested Semester Sequence	<u>Credits</u>
<u>Summer Session</u>			
MA-1020	Medical Terminology I		<u>3</u> 3
<u>First Semester</u>			
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		
HIM-1060	Health Unit Coordinator		3
IT-1010	Introduction to Microcomputer Applications ... OR		3
IT-101H	Honors Introduction to Microcomputer Applications		
MA-2010	Medical Terminology II		<u>2</u> 11
PROGRAM TOTAL			14

MEDICAL BILLING SPECIALIST

Short-Term Certificate

The Medical Billing Specialist Certificate is a short-term program established to prepare students for employment in physicians' offices, medical insurance companies, and outpatient billing services. Medical Billing Specialists provide patient billing services for physicians, dentists, physical therapists, and other health care providers. They are knowledgeable in ICD, CPT-4 and HCPCS coding, medical terminology; processing insurance claims, appeals and denials; fraud and abuse; HIPAA and OIG Compliance; information and web technology; reimbursement practices, and much more.

Degree: Students may apply credits toward Health Information Management degree or the Medical Assisting degree program.

Program Manager - 216-987-4456

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010.
- Eligibility for MATH-1060.

Other Information:

- Number accepted per year is based on courses offered and number of openings available in the course each semester.
- 2.0 GPA required.
- Students must pass all courses with a grade of "C" or higher in all required courses.
- MA-1020 and MA-2010 must be completed within two years of program completion if not using Medical Terminology in current work environment.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.
2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.
3. Conduct yourself ethically and professionally according to the AHIMA code of ethics and standards of practice.
4. Use a variety of techniques to problem solve and arrive at best outcome.
5. Apply regulatory and accreditation standards to identify and support documentation compliance.
6. Apply hospital policies, federal regulations and/ or state statutes in the release and management of protected health information (PHI).
7. Ensure document compliance for services being billed.
8. Apply skills to find, build, research, manage and report both electronic and paper data.
9. Employ auditing skills and methodologies to insure compliance, accuracy, completeness, regulations, policies and procedures, and protocols in the healthcare delivery system.
10. Utilize knowledge and skills of medical terminology, codesets, reimbursement methodologies and regulations to accurately and thoroughly assign respective code sets.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MA-1020	Medical Terminology I	3
MATH-1xxx	1000-level MATH course or higher	3
		12
<u>Second Semester</u>		
HIM-1112	Physician Office Coding	4
HIM-1121	Medical Billing Practices	2
HIM-1311	Legal Aspects of Health Care	3
MA-2010	Medical Terminology II	2
		11
PROGRAM TOTAL		23

Upon successful completion with a grade of C or better in all program courses, the student will earn a Certificate in Medical Billing Specialist.

HOSPITALITY MANAGEMENT (Culinary Art)

Associate of Applied Business degree in Hospitality Management with a concentration in Culinary Art

The Culinary Art curriculum follows the guidelines of the American Culinary Federation and is accredited by the American Culinary Federation Accreditation Commission. The culinary concentration has three major components: hands-on food preparation, kitchen management and supervision, and academic. The culinary concentration emphasizes hands-on food preparation, including advanced techniques in garde-manger, baking, contemporary and classical cuisine. The kitchen management and supervision component emphasizes menu planning, purchasing, cost control, human resource training and supervision, and facilities management. The academic component helps prepare the student for critical thinking, decision making, customer service, communication skills and cultural awareness. This program provides all the basics for the beginner and all of the advanced management skills for those who have worked in the culinary field at line-level positions. Practical industry-related experiences are included.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Successfully complete ServSafe Certification Exam.
2. Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.
3. Communicate verbally to colleagues, staff, and management.
4. Develop menus for healthy living utilizing sustainable and local agriculture.
5. Apply and demonstrate culinary knowledge and skills with consistency using established standards within the industry and facility.
6. Use culinary math and measurements to convert and modify basic recipes.
7. Use a computer to prepare correspondence, menus, daily logs, order sheets, and prep lists.
8. Develop schedules and manage time, inventory, and costs.
9. Apply management principles and practices and group dynamics while delegating, cross training, and motivating employees.
10. Use advanced knowledge and skills in product receiving, utilization, fabrication, and presentation while maintaining quality control.
11. Demonstrate creativity, flexibility, physical stamina, and passion for lifelong learning.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1552	Introduction to Baking & Pastries	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
DIET-1200	Basic Nutrition	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
HOSP-1451	Contemporary Cuisine	4
HOSP-1650	Dining Room Operations	2
HOSP-2700	Hospitality Purchasing	<u>2</u>
		17

<u>Summer Semester</u>		<u>Credits</u>
HOSP-1940	Culinary Arts/Professional Baking Field Experience	1
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		4

<u>Third Semester</u>		<u>Credits</u>
HOSP-1940	Culinary Arts/Professional Baking Field Experience	1
HOSP-2300	Facilities Design and Maintenance	2
HOSP-2340	Menu Planning for Healthy Living	3
HOSP-2350	Restaurant Operations	3
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2560	Garde Manger	<u>3</u>
		18

<u>Fourth Semester</u>		<u>Credits</u>
ACCT-1020	Applied Accounting	3
HOSP-2651	Banquet Management & Production C	4
HOSP-2992	Culinary Evaluation & American Regional Cuisine C	2
HOSP-xxxx	HOSP elective course	2 - 3
	Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)	<u>3</u>
		14 - 15
PROGRAM TOTAL		68 - 69

C = Capstone course.

ELECTIVES		<u>Credits</u>
<u>Electives</u>		
Select from the following courses to fulfill hospitality elective requirement:		
HOSP 1710	Doing Business as a Personal Chef	3
HOSP 1730	International Cuisine	3
HOSP 2550	Baking Production and Sales II	3
HOSP 2750	Culinary Competition	2

PERSONAL CHEF

Short-Term Certificate

The Personal Chef Short-Term Certificate program provides the knowledge and skills needed to succeed in the personal chef industry. Career opportunities would be to own and operate your own personal chef business.

Degree: Credits may apply towards Associate of Applied Business degree in Hospitality Management with a concentration in Culinary Arts.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Effectively communicates verbally and in writing with customers and other professionals.
2. Plan, prepare and properly store foods using personal chef style recipes, tools, equipment and safe and sanitary procedures that meet the customer needs/requirements.
3. Plan, determine and develop marketing, legal, financial, insurance and sales strategies to establish and operate an effective Personal Chef business.
4. Successfully complete ServSafe Certification Exam.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I...OR	3
ENG-101H	Honors College Composition I	
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1710	Doing Business as a Personal Chef	<u>3</u>
		11
	PROGRAM TOTAL	11

PROFESSIONAL BAKING

Certificate of Proficiency

This program provides all of the basic, advanced skills and practice needed to start on a career as a professional pastry Culinarian. It includes all of the educational requirements for certification through the executive pastry chef level of certification by the American Culinary Federation. Students complete a field experience that provides the work experience needed to advance and the work experience needed for certificates.

Degree: Students (especially those seeking executive pastry chef status) may apply credits toward Hospitality Management Degree with a Concentration in Culinary Art.

Program Manager - 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate appropriate use of interpersonal communication skills, cooperation, teambuilding, and conflict management in daily foodservice operations.
2. Develop and apply principles of self and team awareness, time awareness, and personal responsibility.
3. Demonstrate proficient baking skills in quality production of breads, cakes, cookies, pies, sauces, custards, and ice cream while applying sanitation and safety principles, and correctly using appropriate equipment.
4. Demonstrate knowledge and principles of ingredients, inventory, organization, receiving, measuring, and recipe manipulation.
5. Plan, execute, control, and consistently produce bakery and pastry products for sale in a diverse foodservice environment.
6. Apply critical thinking skills to manage people, efficiently produce product, and control quality of production in a wide range of foodservice outlets.
7. Develop and apply professional business and human interactive skills in the production and sale of baked goods.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I...OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1552	Introduction to Baking & Pastries	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
HOSP-1451	Contemporary Cuisine	4
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2550	Baking Production and Sales II	3
HOSP-2700	Hospitality Purchasing	<u>2</u>
		12
<u>Summer Session</u>		<u>Credits</u>
HOSP-1940	Culinary Arts/Professional Baking Field Experience	2
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		5
	PROGRAM TOTAL	32

PROFESSIONAL CULINARIAN/COOK

Certificate of Proficiency

This program provides all the basic, advanced skills and practice needed to start a career as professional cook/chef. It includes all of the educational requirements for certification through the executive chef level of certification by the American Culinary Federation. Students complete a field experience that provides the work experience needed to advance and the work experience needed for certification.

Degree: Credits may apply toward Hospitality Management Degree with a Concentration in Culinary Art.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Successfully complete ServSafe Certification Exam.
2. Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.
3. Communicate appropriately to colleagues, staff, and management.
4. Convert and/or modify basic recipes using culinary math and measurements.
5. Apply and demonstrate culinary knowledge and skills with consistency using established standards within the industry and facility.
6. Use a computer to prepare correspondence, menus, daily logs, order sheets, and prep lists.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1552	Introduction to Baking & Pastries	3
		13
<u>Second Semester</u>		<u>Credits</u>
HOSP-1040	Customer Service	2
HOSP-1451	Contemporary Cuisine	4
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2700	Hospitality Purchasing	2
		14
<u>Summer Session</u>		<u>Credits</u>
HOSP-1940	Culinary Arts/Professional Baking Field Experience	2
MATH-1xxx	1000-level MATH course or higher	3
		5
	PROGRAM TOTAL	32

HOSPITALITY MANAGEMENT

(Lodging-Tourism Management)

Associate of Applied Business degree in Hospitality Management with a concentration in Lodging-Tourism Management

The lodging-tourism management concentration prepares students for entry-level supervision in front office, sales and convention management. This leads to increasingly responsible management positions in hotels, motels and clubs. Included is a minimum component of foodservice and observations of front-office and sales/marketing and convention planning functions. This program is accredited by the Commission on Accreditation of Hospitality Management (CAHM) Programs. Practical industry related experiences are included.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and speak standard English and use basic math skills appropriate to a business environment.
2. Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
3. Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
4. Use organization and flexibility to complete tasks, make decisions, and problem solve in a timely manner with attention to detail in an unpredictable environment.
5. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience based on respect and joy.
6. Read and accurately interpret standard indicators of the organization's financial health.
7. Use appropriate technology for written communication, information gathering, scheduling, data analysis, forecasting, report generation, and planning to facilitate smooth operation of a hospitality/tourism organization.
8. Take responsibility for actively pursuing personal and professional growth.
9. Demonstrate leadership and supervision skills requiring personal interaction, motivation, decision-making, ethical and professional behavior, and an appreciation of diversity to support the organization and its goals.
10. Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

(continued on next page)

Program Sequences

HOSPITALITY MANAGEMENT (Lodging-Tourism Management) (Continued)

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		15
<u>Second Semester</u>		<u>Credits</u>
ACCT-1020	Applied Accounting	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
HOSP-1480	Housekeeping Operations	2
HOSP-1580	Front Office Operations	2
Arts & Hum (see AAB/AAS degree requirements)		<u>3</u>
		13
<u>Summer Semester</u>		<u>Credits</u>
HOSP-1960	Lodging/Tourism Management Field Experience	1
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		4
<u>Third Semester</u>		<u>Credits</u>
HOSP-1380	Dimensions of Tourism	3
HOSP-2300	Facilities Design and Maintenance	2
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2480	Hospitality Law	3
HOSP-2700	Hospitality Purchasing	<u>2</u>
		13
<u>Fourth Semester</u>		<u>Credits</u>
HOSP-2380	Hospitality Marketing and Sales	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2580	Convention Management and Meeting Planning	2
HOSP-2861	Lodging and Tourism Management Experience Practicum C	4
Soc& Beh Sci (See AAB/AAS degree requirements)		<u>3</u>
		15
PROGRAM TOTAL		60

C = Capstone course.

EVENT PLANNING

Short-Term Certificate

The Event Planning Certificate program is intended for students interested in the theories and practical aspects of event and meeting management, including research, design, planning, coordination, execution, and evaluation of events and meetings of various types and sizes. Graduates will fill roles of: catering assistants, meeting planners, event assistants, event planners, promotions managers, and small business owners.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify key players (i.e. vendors, clients, hotels, caterers, sponsors, etc.) build and sustain appropriate relations to work effectively to plan and execute events.
2. Demonstrate professional and ethical conduct and work practices to comply with appropriate industry standards and applicable laws.
3. Communicate clearly and effectively verbally and in writing using appropriate media and cultural sensitivity with prospects, clients, colleagues, sponsors, vendors, media and other stakeholders.
4. Determine and use appropriate information sources and technology to research, plan, communicate, market, execute and evaluate an event.
5. Plan, coordinate, and execute within time and budget parameters, the event theme, program, logistics, resources, and marketing, while minimizing risk and meeting or exceeding client expectations.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1040	Customer Service	2
HOSP-1180	Event Planning Essentials	2
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	
XXXX	Elective Requirements ¹	<u>2-4</u>
		14 - 16
<u>Second Semester</u>		<u>Credits</u>
HOSP-2180	Event Planning Workshop	2
HOSP-2380	Hospitality Marketing and Sales	3
HOSP-2400	Hospitality Management and Supervision	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
XXXX	Elective Requirements ¹	<u>2</u>
		13
PROGRAM TOTAL		27 - 29

¹Must complete two courses to meet elective requirements.

<u>Electives</u>		<u>Credits</u>
Students must select two courses (4-6) credits of electives from the following courses.		
ACCT 1020	Applied Accounting	3
BADM-1300	Small Business Management	4
HOSP 1020	Sanitation and Safety	2
HOSP 2340	Menu Planning for Healthy Living	3
HOSP 2480	Hospitality Law	3
HOSP 2580	Convention Management and Meeting Planning	2
IT 1030	Internet Fundamentals	2
SPCH 1010	Fundamentals of Speech Communication	3

LODGING ROOMS DIVISION

Certificate of Proficiency

This program focuses on training the student for Rooms Division positions in the lodging industry. Students will have on-site training at area lodging facilities and will learn to use front desk and other related software. Upon successfully completing the courses, students will be awarded a Rooms Division Certification of Specialization from the American Hotel and Motel Association. Students complete a practicum that provides the work experience needed to advance and the work experience needed for certification.

Degree: Students may apply credits toward the Hospitality Management with a concentration in Lodging-Tourism Management degree program.

Program Manager – 216-987-4082

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and speak standard English and use basic math skills appropriate to a business environment.
2. Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
3. Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
4. Use organization and flexibility to complete tasks, make decisions, and problem solve in a timely manner with attention to detail in an unpredictable environment.
5. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience based on respect and joy.
6. Read and accurately interpret standard indicators of the organization's financial health.
7. Use appropriate technology for written communication, information gathering, scheduling, data analysis, forecasting, report generation, and planning to facilitate smooth operation of a hospitality/tourism organization.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1040	Customer Service	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
ACCT-1020	Applied Accounting	3
HOSP-1480	Housekeeping Operations	2
HOSP-1580	Front Office Operations	2
HOSP-1960	Lodging/Tourism Management Field Experience	1
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2480	Hospitality Law	3
HOSP-2380	Hospitality Marketing and Sales	<u>3</u>
		17
	PROGRAM TOTAL	32

HOSPITALITY MANAGEMENT (Restaurant/Food Service Management)

Associate of Applied Business degree with a concentration in Restaurant/Food Service Management

This program is accredited by both the Commission on Accreditation of Hospitality Management Programs and the Accrediting Commission of the American Culinary Federation, insuring an industry-approved quality curriculum. Students are prepared for entry-level front-and back-of-the-house supervisory positions in both restaurant and institutional food service and beverage establishments. Students are also prepared for future positions as kitchen managers, dining room managers, banquet managers, purchasing agents, food and beverage controllers and restaurant/food service managers. Curriculum includes skill training, business and management techniques, critical thinking, decision making, customer service, communication and cultural awareness skills. Practical industry related experiences are included.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Obtain an entry-level skill position in the food service industry.
2. Demonstrate customer service skills and professional and ethical conduct according to industry standards.
3. Apply proper sanitation principles to meet industry standards and government regulations.
4. Listen, speak, and communicate with team members to achieve customer satisfaction and operational success.
5. Participate in day-to-day operation of a food and beverage establishment.
6. Apply time management skills and principles of quality to daily work tasks.
7. Identify and explain the importance of diversity in the workplace.
8. Utilize the principles of purchasing and inventory control.
9. Apply standard HR principles in regards to recruiting, retaining, and developing staff.
10. Develop team ethics and goal achievement in a relevant work environment.
11. Practice and refine decision-making skills.
12. Manage a day-to-day dining room operation using standard applied business practices such as forecasting, cost control, and marketing and promotions.
13. Demonstrate an understanding of basic culinary competencies.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1360	Fundamentals of Restaurant/Foodservice Management	3
HOSP-1552	Introduction to Baking & Pastries	3
		15
<u>Second Semester</u>		
ACCT-1020	Applied Accounting	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
HOSP-1451	Contemporary Cuisine	4
HOSP-1650	Dining Room Operations	2
HOSP-1680	Beverage Management	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
		17
<u>Summer Semester</u>		
HOSP-1950	Restaurant/Food Service Management Field Experience	1
MATH-1xxx	1000-level MATH course or higher	3
		4
<u>Third Semester</u>		
HOSP-2350	Restaurant Operations	3
HOSP-2360	Restaurant Marketing	2
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2700	Hospitality Purchasing	2
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	3
		13
<u>Fourth Semester</u>		
HOSP-2370	Restaurant/Foodservice Entrepreneurship C	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2871	Food and Beverage Management Experience C	2
	Arts & Hum (see AAB/ AAS degree requirements)	3
	Soc & Beh Sci (See AAB/ AAS degree requirements)	3
		14
	PROGRAM TOTAL	63

C = Capstone course.

FOOD AND BEVERAGE OPERATIONS

Certificate of Proficiency

This program provides all the basic, advanced skills and practice needed to start a career as a professional Food and Beverage Manager. Students complete a practicum that provides the work experience needed to advance and the work experience needed for certification.

Degree: Students may apply credits toward Hospitality Management with a concentration in Restaurant/Foodservice Management Degree program.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Obtain an entry-level skill position in the food service industry.
2. Demonstrate customer service skills and professional and ethical conduct according to industry standards.
3. Apply proper sanitation principles to meet industry standards and government regulations.
4. Listen, speak, and communicate with team members to achieve customer satisfaction and operational success.
5. Participate in day-to-day operation of a food and beverage establishment.
6. Apply time management skills and principles of quality to daily work tasks.
7. Identify and explain the importance of diversity in the workplace.
8. Utilize the principles of purchasing and inventory control.
9. Apply standard HR principles in regards to recruiting, retaining, and developing staff.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1360	Fundamentals of Restaurant/Foodservice Management	3
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
HOSP-1650	Dining Room Operations	2
HOSP-1680	Beverage Management	2
HOSP-1950	Restaurant/Food Service Management Field Experience	1
HOSP-2360	Restaurant Marketing	2
HOSP-2370	Restaurant/Foodservice Entrepreneurship	3
HOSP-2400	Hospitality Management and Supervision	<u>3</u>
		16
	PROGRAM TOTAL	31

HUMAN SERVICES

Associate of Applied Science degree in Human Services

Alcohol/Chemical Dependency Option. The Alcohol/Chemical Dependency Option of the Human Services program provides students the competencies that enable them to work with people who are chemically dependent. Career opportunities for graduates include employment in a variety of settings ranging from in-patient programs to community-based outpatient and prevention programs. Students in the program can qualify to be a Chemical Dependency Counselor Assistant after taking three credits in Chemical dependency course work and completing 40 hours of volunteer work under a licensed supervisor. Graduates of the program receive a significant number of board recognized hours toward the Licensed Chemical Dependency Counselor II (LCDCII) requirements established by the Ohio Department of Alcohol and Drug Addiction Services, and are prepared for licensure exams for LCDC II administered by the Chemical Dependency Professionals Board.

Generalist Option. The Generalist Option of the Human Services program provides students with the competencies which enable them to work with a variety of people with various needs. Career opportunities for graduates are in community-based programs which emphasize practical approaches to problem solving. All graduates of the Human Services program are eligible to receive certification as a Social Work Assistant from the Ohio Counselor, Social Worker, Marriage and Family Therapy Board.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED highly recommended, but not required.
- Eligibility for ENG-1010.
- Complete the following in sequence: HS-1300 and HS-1850 ("C" grade or higher in each).
- Requirements listed are the same for both Generalist and Alcohol/Chemical Dependency options.

Other Information:

- Human Service students must sign and abide by the Human Service Code of Conduct during the first week of enrollment in HS-1300.
- Criminal Background check (BCI) required (see page 73); must be completed at least three months prior to enrollment in HS-1850.
- Students may only enroll in the following courses prior to completing BCI: HS-1100, HS-1110, HS-2530.
- Students must maintain a 2.00 GPA in all HS courses.
- Schedules must be approved by HS faculty advisor prior to registration for second semester and beyond.
- Non-majors may enroll in HS courses for which they have satisfied the prerequisite.
- Students re-entering after one year absence from the Human Service Program will be required to complete another BCI.
- Contact program coordinator for additional information.
- Students will be charged a fee for Health Careers Liability Insurance when enrolling in HS-1850.

(continued on next page)

Program Sequences

HUMAN SERVICES (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Conduct oneself in a professional manner and apply sound ethical practices according to the Ohio Counselors and Social Workers and Family Therapy Board and the Ohio Chemical Dependency Professionals Board.
2. Develop and promote healthy practices, self awareness and self care applying this personally, with clients, colleagues and other professionals.
3. Listen, speak and contribute to the quality of life of clients through comprehensive holistic service delivery according to specific agency policies and procedures.
4. Apply/utilize written and computer skills to maintain appropriate client and agency reports, records and documents.
5. Employ and interpret clear, concise and open communication skills including verbal, non-verbal and written communications in a professional manner.
6. Understand the history, philosophy, theoretical concepts/frameworks and clinical intervention skills related to human services professionals.
7. Engage in practices and techniques that encompass group facilitation, psycho-social assessment, behavior change and motivating practices working with diverse client populations.

Note: Letters in parenthesis relate to options (a) or (b).

Suggested Semester Sequence		
<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
HS-1100	Foundations of Substance Abuse and Addiction	3
HS-1300	Introduction to Human Services	3
PSY-1010	General Psychology ...OR	3
PSY-101H	Honors General Psychology	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		15
<u>Second Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ...OR	3
ENG-102H	Honors College Composition II	
HS-1110	Crisis Intervention and Child Abuse Issues (b)... OR	3-4
HS-1200	Treatment Modalities and Diversity Issues in Chemical Dependency (a)	
HS-1210	Prevention and Chemical Dependency (a)...OR	2-4
HS-1220	Diagnostic Tools and Legal Considerations (b)	
HS-1400	Group Work in the Human Services	2
HS-1850	Intro to Human Services Principles & Practices	5
SPCH-1010	Fundamentals of Speech Communication ...OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
		18 - 21

<u>Third Semester</u>		<u>Credits</u>
HS-2200	Ethics in Chemical Dependency (a)... OR	3-4
HS-2300	Family Theory and Services (b)	
HS-2600	Systems Approach to Case Management	4
HS-2850	Human Services Principles and Practices I	5
PSY-2020	Life Span Development ...OR	4
PSY-202H	Honors Life Span Development	
HS-xxxx	Elective	2-3
		18 - 20

<u>Fourth Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory ¹	1
HS-2530	Proposal Writing and Program Development	2
HS-2860	Human Services Principles and Practices II	3
HS-2990	Human Services Capstone Course C	2
MATH-1xxx	1000-level MATH course or higher	3
PSY-2070	Behavior Modification ² ...OR	3
PSY-2080	Abnormal Psychology ²	-
		17
	PROGRAM TOTAL	68-73

¹BIO-2331 & 2341 together will be accepted in place of BIO-1050 & 105L.

²PSY-2070 recommended for students pursuing generalist option, and PSY-2080 recommended for students pursuing chemical dependency option.

C = Capstone course.

OPTIONS

<u>(a) Alcohol/Chemical Dependency</u>		<u>Credits</u>
Program Total for Option a = 69-70		
HS 1200	Treatment Modalities and Diversity Issues in Chemical Dependency	4
HS 1210	Prevention and Chemical Dependency	2
HS 2200	Ethics in Chemical Dependency	3

<u>(b) Generalist Option</u>		<u>Credits</u>
Program Total for Option b = 71-72		
HS 1110	Crisis Intervention and Child Abuse Issues	3
HS 1220	Diagnostic Tools and Legal Considerations	4
HS 2300	Family Theory and Services	4

INFORMATION TECHNOLOGY - BUSINESS SOLUTIONS

Associate of Applied Business in Information Technology - Business Solutions

Degree integrates technology, business, marketing, critical thinking, communication, team work and problem solving with a three semester co-op to prepare for an entry-level job in Business Solution Development or for the progression to a four year degree.

Program Admission Requirements:

- High School Diploma/GED required.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410 (appropriate score on Math Placement test or MATH-1270 or MATH-1280 with "C" or higher).

Other Information:

- Requires students to participate in several co-op experiences.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate orally and in writing to present clearly and effectively to a variety of business audiences including clients, colleagues and other professionals.
2. Operate in a diverse team environment with professionalism, integrity and accountability.
3. Adapt to change within their profession by demonstrating a commitment to continuous learning.
4. Apply foundational business management concepts, supply chain management principles, marketing and sales functions, and financial and accounting skills to interface between IT development and the stakeholder to meet or exceed their expectations.
5. Plan, organize and prioritize tasks in order to meet project deadlines.
6. Effectively utilize personal management skills, problem solving, and knowledge of the organization to identify and improve an organization's performance.
7. Leverage electronic technology and integrate with existing systems to solve business problems.
8. Develop, test, implement and maintain program interfaces (such as websites), supporting structures (such as back-end databases), and delivery platforms.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
IT-1025	Information Technology Concepts for Programmers	3
VC&D-1015	Digital Studio Basics	<u>3</u>
		16
<u>Second Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
ENG-2151	Technical Writing	3
IT-1050	Programming Logic	3
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
MATH-1410	Elementary Probability and Statistics I ¹	3
VC&D-1430	2D Design	<u>3</u>
		18
<u>Summer Session</u>		<u>Credits</u>
BADM-2830	Cooperative Field Experience	1
ECON-2620	Principles of Microeconomics	<u>4</u>
		5
<u>Third Semester</u>		<u>Credits</u>
ACCT-1340	Managerial Accounting ... OR	3-4
BADM-xxxx	Business Elective	
BADM-2830	Cooperative Field Experience	1
ECON-2610	Principles of Macroeconomics	4
IT-2351	Enterprise Database Systems	4
ITMP-2620	Visual Basic Programming	<u>4</u>
		16 - 17
<u>Fourth Semester</u>		<u>Credits</u>
BADM-2830	Cooperative Field Experience	1
BADM-xxxx	Business Elective ... OR	2 - 4
MARK-2010	Principles of Marketing ... OR	
ACCT-2520	QuickBooks Immersion	
IT-2600	E-Business Programming Technologies C	3
IT-2700	Systems Analysis and Design	3
SPCH-1010	Fundamentals of Speech Communication	<u>3</u>
		12 - 14
PROGRAM TOTAL		67 - 70

¹Students who do not place into MATH-1410 on the assessment test must take MATH-1250 or higher as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.

C = Capstone course.

ELECTIVES

		<u>Credits</u>
BADM 1040	Principles & Practices of Customer Service	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 2110	Production/Operations Management	3
BADM 2160	Introduction to Purchasing	3
BADM 2501	Business Strategies	3
BADM 2600	Introduction to World Trade	3

INFORMATION TECHNOLOGY - BUSINESS SOLUTIONS

Post-Degree Professional Certificate

Nearly all organizations rely on computer and information technology (IT) to conduct business and operate efficiently. Business Solutions Developers (also called Computer Systems Analysts and Systems Analysts) use IT tools to help organizations of all sizes achieve their goals. They may design and develop new business systems or enhance existing business systems by implementing new technological solutions.

Program Admission Requirements:

- Program requires students to have completed an Associate Degree or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Operate in a diverse team environment with professionalism, integrity and accountability.
2. Adapt to change within their profession by demonstrating a commitment to continuous learning.
3. Plan, organize and prioritize tasks in order to meet project deadlines.
4. Effectively utilize personal management skills, problem solving and knowledge of the organization to identify and improve an organizations performance.
5. Leverage electronic technology and integrate with existing systems to solve business problems.
6. Develop, test, implement and maintain program interfaces (such as web sites), supporting structures (such as back-end databases), and delivery platforms
7. Communicate orally and in writing to present clearly and effectively to a variety of business audiences including clients, colleagues and other professionals.

<u>First Semester</u>		<u>Credits</u>
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3 6
<u>Second Semester</u>		<u>Credits</u>
IT-2351	Enterprise Database Systems	4
ITMP-2620	Visual Basic Programming	4
ITWM-1010	Creating Web Pages with HTML and JavaScript	3 -
		11
<u>Summer Semester</u>		<u>Credits</u>
IT-2600	E-Business Programming Technologies	3
IT-2700	Systems Analysis and Design	3 6
	PROGRAM TOTAL	23

MOBILE APPLICATION DEVELOPMENT

Short-Term Certificate

Short term certificate in Mobile App Development. Students will learn the competencies required to analyze, design, develop and test mobile applications. Students explore the latest mobile platforms and prepare to publish apps. Skills acquired will help students to prepare for jobs in mobile application development and entrepreneurial self-publishing opportunities.

Degree: Students may apply credits towards Information Technology - Programming and Development degree program.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Engage in directed work as a member of a diverse software development and/or support team.
2. Analyze, design, develop and test mobile applications to address specified business problems using high-level languages, technologies and appropriate methodologies.
3. Test, package and prepare a mobile application for publishing for a given framework(s) following legal and ethical guidelines demonstrating an understanding of the publishing process.
4. Troubleshoot mobile application issues to determine the best solution to satisfy the customer.

<u>First Semester</u>		<u>Credits</u>
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3 6
<u>Second Semester</u>		<u>Credits</u>
ITMP-2650	Java Programming	4
IT-1100	Fundamentals of iOS Application Development	3 7
<u>Third Semester</u>		<u>Credits</u>
IT-2351	Enterprise Database Systems	4
IT-2100	iOS Application Programming	4
IT-2110	Android Mobile App Development	3 11
	PROGRAM TOTAL	24

INFORMATION TECHNOLOGY - NETWORKING SOFTWARE

Associate of Applied Business degree in Information Technology - Networking Software

Students will be prepared for careers dealing with network software systems analysis, planning and implementation to create, manage and support networks. Students will gain the necessary skills to analyze network system needs for design, installation, maintenance and management of network software systems. Skills acquired will assist students in preparing to take industry certification exams.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010
- Eligibility for 1000-level MATH course

Other Information:

- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.
- Skills acquired prepare students to take industry certification.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in-person, on the phone, and via the Internet with all levels in the organization.
2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.
3. Work independently and effectively within a team to meet the needs of the organization.
4. Operate within diverse business cultures with professionalism, integrity and accountability.
5. Demonstrate ethical behavior and recognize legal issues.
6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.
7. Plan, organize, and prioritize tasks in order to meet project deadlines.
8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.
9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.
10. Apply principles of networking software to design, install, configure, and maintain secure, fault tolerant operation within a server based network environment, including local and remote access.
11. Sit for A+, Network +, Security + and MCP Certification Exams.

Suggested Semester Sequence		<u>Credits</u>
<u>Summer Semester</u>		
EET-1015	Introduction to Computer Maintenance and Repair	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
IT-1025	Information Technology Concepts for Programmers	3
		9
<u>First Semester</u>		
EET-1035	Operating Systems and Software for PC Technicians	4
EET-1055	Computer Hardware Support	4
ITNT-2300	Networking Fundamentals	3
IT-1050	Programming Logic	3
		14
<u>Second Semester</u>		
ITNT-2310	TCP/IP	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
ITNT-2320	Network Administration I	3
Arts & Hum/Soc & Beh Sci (see AAB Degree requirements)		3
		12
<u>Third Semester</u>		
BADM-1020	Introduction to Business	3
ENG-2151	Technical Writing	3
ITNT-2370	Network Security Fundamentals	3
ITNT-2380	Linux Administration	3
MATH-1xxx	1000-level MATH course or higher	3
		15
<u>Fourth Semester</u>		
BADM-1050	Professional Success Strategy	3
ITNT-2420	Network Administration II	3
ITNT-2990	Networking Capstone C	3
	Natural Science (lecture)	3
		12
	PROGRAM TOTAL	62

C = Capstone course.

See pages 145-146 for the Computer Networking Hardware degree and Computer Maintenance Technology Certificate.

INFORMATION TECHNOLOGY - PROGRAMMING AND DEVELOPMENT

Associate of Applied Business degree in Information Technology - Programming and Development

Programmers, developers and software engineers design and develop many types of software, including computer games, business applications, operating systems, network control systems, and middleware. Students develop competencies in designing, implementing, integrating and maintaining software systems (including mainframes, websites, etc.) using a variety of languages and technologies. Skills acquired will assist students in preparing to take industry positions including, but not limited to, customer support, testing, programming and product development.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010
- Eligibility for MATH-1410 (appropriate placement score or MATH-1270 or MATH-1250 with grade of "C" or higher).

Other Information:

- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.
- Skills acquired prepare students to take industry certification.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:


1. Communicate effectively utilizing verbal, written and presentation skills to interview and educate stakeholders.
2. Operate in a diverse team environment with professionalism, integrity and accountability.
3. Explain and implement technologies that are impacted by legal and ethical issues.
4. Plan, organize and prioritize tasks in order to meet project deadlines.
5. Adapt to change within their profession by demonstrating a commitment to continuous research and learning.
6. Apply knowledge of organizational structures, models, processes, procedures, rules and distribution of power and authority in order to function as an effective IT resource that meets organizational goals.
7. Apply knowledge of programming, website maintenance, operating systems, networking and security to install, configure, troubleshoot and provide ongoing support and maintenance for technology related organizational systems.
8. Apply knowledge of programming (application, web, data and security) at the enterprise level and use industry standards, guidelines and appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing) as part of a development team.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-1050	Professional Success Strategy	3
ENG-1010	College Composition I OR	3
ENG-101H	Honors College Composition I	
IT-1025	Information Technology Concepts for Programmers	3
		16

<u>Second Semester</u>		<u>Credits</u>
ENG-2151	Technical Writing	3
IT-1050	Programming Logic	3
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
MATH-1410	Elementary Probability and Statistics I ¹	3
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
BADM-xxxx	Business Elective	3
		18

<u>Summer Semester</u>		<u>Credits</u>
IT-2830	Cooperative Field Experience ²	1
		1

<u>Third Semester</u>		<u>Credits</u>
IT-2351	Enterprise Database Systems	4
ITXX-xxxx	Programming Elective	3 - 4
ITMP-2650	Java Programming	4
ITWM-2320	Interactive Internet Programming	4
Soc & Beh Sci/Science (see AAB/AAS Degree Requirements)		3
		18 - 19

<u>Fourth Semester</u>		<u>Credits</u>
BADM-1300	Small Business Management	4
ITMP-2660	Data Structures & Algorithms	4
ITWM-2030	Active Server Pages ... OR	4
IT-2600	E-Business Programming Technologies	3
IT-2700	Systems Analysis and Design 	3
		14 - 15

PROGRAM TOTAL 67 - 69

ELECTIVES		<u>Credits</u>
<u>Business Electives</u>		
Students must select from the following courses to fulfill the business elective requirement:		
BADM 1040	Principles & Practices of Customer Service	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 2010	Business Communications	3

(continued on next page)

INFORMATION TECHNOLOGY - Programming and Development (Continued)

<u>Programming Electives</u>		<u>Credits</u>
Students must select from the following courses to fulfill the programming elective requirement. Courses cannot be used for both a requirement and elective (in the case of an "or" selection in the semester sequence):		
IT 1100	Fundamentals of iOS Application Development	3
IT 2100	iOS Application Programming	4
IT 2110	Android Mobile App Development	3
IT 2250	Excel: VBA Programming	3
IT 2400	Unity Game Programming	3
IT 2600	E-Business Programming Technologies	3
IT 2815	Special Topics - Introduction to Geographical Information Systems	3
ITMP 2620	Visual Basic Programming	4
ITMP 2670	C/C++ Programming Language	4
ITMP 2819	Special Topics: Visual C# .NET	4
ITWM 2030	Active Server Pages	4
ITWM 2806	Special Topics: JavaScript I	2

¹Students who do not place into MATH-1410 on the assessment test must take MATH-1270 or MATH-1250 as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.

MATH-2010 can be taken in place of MATH-1410. Highly recommended for students planning to transfer to a four year university.

²Students who cannot complete a co-op experience due to a fulltime work commitment can request a waiver/substitution of another course to meet this requirement.

 = Capstone course.

INFORMATION TECHNOLOGY - Programming and Development

Post-Degree Professional Certificate

Post-graduate certificate designed to update or enhance skills in object-oriented technologies. Students will experience the object-oriented environment of programming, database and Web technologies.

Program Admission Requirements:

- Eligibility for MATH-1410.
- Associate Degree or higher required.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Operate in a diverse team environment with professionalism, integrity and accountability.
2. Explain and implement technologies that are impacted by legal and ethical issues.
3. Plan, organize and prioritize tasks in order to meet project deadlines.
4. Adapt to change within their profession by demonstrating a commitment to continuous research and learning.
5. Apply knowledge of programming, website maintenance, operating systems, networking and security to install,

configure, troubleshoot and provide ongoing support and maintenance for technology related organizational systems.

6. Apply knowledge of programming (application, web, data and security) at the enterprise level and use industry standards, guidelines and appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing) as part of a development team.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3
ITWM-1010	Creating Web Pages with HTML and JavaScript	3 9
 <u>Second Semester</u>		 <u>Credits</u>
IT-xxxx	IT Elective Course	2 - 4
ITMP-2650	Java Programming ... OR	4
ITMP-2670	C/C++ Programming Language	- 6 - 8

<u>Third Semester</u>		<u>Credits</u>
ITWM-2320	Interactive Internet Programming	4
IT-2351	Enterprise Database Systems	4 8

<u>Fourth Semester</u>		<u>Credits</u>
IT-2700	Systems Analysis and Design	3
ITMP-2660	Data Structures & Algorithms	4
ITWM-2030	Active Server Pages ... OR	3-4
IT-2600	E-Business Programming Technologies	- 10 - 11

PROGRAM TOTAL 33 - 36

ELECTIVES

Programming Electives Credits

Students must select from the following courses to fulfill the programming elective requirements. Courses cannot be used for both a requirement and elective (in the case of an "or" selection above):

IT 1100	Fundamentals of iOS Application Development	3
IT 2100	iOS Application Programming	4
IT 2110	Android Mobile App Development	3
IT 2250	Excel: VBA Programming	3
IT 2400	Unity Game Programming	3
IT 2600	E-Business Programming Technologies	3
IT 2815	Special Topics - Introduction to Geographical Information Systems	3
ITMP 2620	Visual Basic Programming	4
ITMP 2650	Java Programming	4
ITMP 2670	C/C++ Programming Language	4
ITMP 2680	Visual C# .NET Programming	4
ITWM 2030	Active Server Pages	4
ITWM 2806	Special Topics: JavaScript I	2

INFORMATION TECHNOLOGY - Web Application Development

Short-Term Certificate

Short-term certificate in Web application development. Students will explore current technologies to analyze, design, develop, implement and test database driven Web applications. Skills acquired will prepare students for jobs as Web, Application, PHP, ASP.NET and Web 2.0 developers. Certificate is stackable with the Programming and Development degree.

Degree: Students may apply credits towards Information Technology – Programming and Development degree program.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Engage in directed work as a member of diverse software development and/or support team.
2. Analyze, design, develop and test web applications to address specified business problems using high-level languages, technologies and appropriate methodologies.
3. Prepare, test and deploy a web application within a given platform(s) and framework(s) following legal and ethical guidelines.
4. Troubleshoot web application issues to determine the best solution to satisfy the customer.

Suggested Semester Sequence		<u>Credits</u>
<u>Summer Semester</u>		
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	<u>3</u> 6
<u>First Semester</u>		
ITMP-2650	Java Programming	4
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
ITWM-2320	Interactive Internet Programming	<u>4</u> 11
<u>Second Semester</u>		
IT-2351	Enterprise Database Systems	4
IT-2600	E-Business Programming Technologies	3
ITWM-2030	Active Server Pages	<u>4</u> 11
	PROGRAM TOTAL	28

INTEGRATED SYSTEMS ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Integrated Systems Engineering Technology.

The Integrated Systems Engineering Technology program prepares students to diagnose and resolve industrial equipment problems using good technical assessment skills and core electrical skills. The program also provides students with a base knowledge in advanced skills such as Programmable Logic Controllers (PLCs) electronics and digital applications, robotics, and process controls. Students completing the Integrated Systems Engineering Technology program will find jobs as instrument control technicians, maintenance repair technicians, electrical maintenance technicians, power plant control room operators, or integrated systems technicians.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-0950 or higher

Other Information:

- Options available in Integrated Systems Maintenance - Fluid Power and Programmable Logic Controllers, Environmental Systems Maintenance - Boiler, HVAC, and Welding.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify and use proper test equipment and tools, and use test information to solve system problems.
2. Use team skills to collaborate and perform in a professional and workman like fashion in a diverse environment to meet organizational goals and objectives.
3. Apply appropriate Math, science, and computer skills to support installation, troubleshooting, and maintenance of electrical equipment and systems.
4. Demonstrate effective comprehension and communication skills through listening, writing and speaking about problems, processes, and procedures to supervisors, team members, and management.
5. Diagnose and resolve equipment problems by utilizing good technical assessment skills that include planning, reliability, logical thinking, ability to use drawings, schematics and documentation, and a solid understanding of electrical maintenance theory and principles.
6. Assess for electrical and environmental hazards and follow lock out/ tag out procedures according to applicable industry and regulatory standards.
7. Apply the core electrical skills including wiring methods, lighting, motor controls, troubleshooting and print reading and exhibit base knowledge in advanced skills such as PLC's, electronics and digital applications, robotics, and process controls.
8. Employ cross functional skills to differentiate between thermal, mechanical, fluid & electrical power systems and isolate fault to a particular sub-system.

(continued on next page)

INTEGRATED SYSTEMS ENGINEERING TECHNOLOGY (Continued)

Letters in parenthesis relate to Options (a) Integrated Systems Maintenance and (b) Environmental Systems Maintenance and (c) Welding

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
MATH-1280	Advanced Intermediate Algebra or higher ¹	5
ISET-1450	Heating Ventilation Air Conditioning/ Refrigeration I (b) ... OR	2
ISET-1100	Welding Blue Print Reading (c)	2
		15-17

<u>Second Semester</u>		<u>Credits</u>
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
ISET-1340	Industrial Piping and Tubing	2
ISET-1420	Applied Electricity II (a)	3
ISET-1320	Fundamentals of Fluid Power (a) ... OR	2-4
ISET-1460	Fundamental Boiler Technology (b) ... OR	
ISET-2100	Gas Metal Arc Welding (MIG) ² (c) ... OR	
ISET-2110	Gas Tungsten Arc Welding (TIG) ² (c) ... OR	
ISET-2120	Shielded Metal Arc Welding (STIG) ² (c) ... OR	
ISET-2130	OxyFuel Gas Welding ² (c) ... OR	
		13 - 15

<u>Summer Semester</u>		<u>Credits</u>
ISET-2200	Industrial Motor Controls	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
GEN-1010	Personal Development	2
		8

<u>Third Semester</u>		<u>Credits</u>
ENG-2151	Technical Writing	3
PSY-1050	Introduction to Industrial/Organizational Psychology	3
ISET-2240	Applied National Electric Code	3
ISET-2500	Programmable Logic Controllers Maintenance I	3
MET-2300	Fluid Power (a) ... OR	2-4
ISET-2450	Heating Ventilation Air Conditioning/ Refrigeration II (b) ... OR	
ISET-2100	Gas Metal Arc Welding (MIG) ² (c) ... OR	
ISET-2110	Gas Tungsten Arc Welding (TIG) ² (c) ... OR	
ISET-2120	Shielded Metal Arc Welding (STIG) ² (c) ... OR	
ISET-2130	OxyFuel Gas Welding ² (c)	
		14 - 16

<u>Fourth Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
ISET-2210	Commercial Wiring	3
ISET-2220	Fundamentals of Electronics and Instrumentation	3
ISET-2510	Programmable Logic Controllers Maintenance II ³ (a) ... AND	2
ISET-2520	Programmable Logic Controllers Maintenance III ³ (a)... OR	2
ISET-2460	Applied Boiler Technology (b)	2
ISET-2990	Reliability Centered Maintenance C	3
		12 - 16
	PROGRAM TOTAL	67-68

OPTIONS

Program Total for Option a = 67
 Program Total for Option b = 67
 Program Total for Option c = 68

<u>(a)Integrated Systems Maintenance</u>	<u>Credits</u>
Fluid Power and Programmable Logic Controllers Option (a)	
ISET 1320 Fundamentals of Fluid Power	2
ISET 2510 Programmable Logic Controllers Maintenance II	2
ISET 2520 Programmable Logic Controllers Maintenance III	2
MET 2300 Fluid Power	3

<u>(b)Environmental Systems Maintenance</u>	<u>Credits</u>
Boiler Technology, HVAC, Option (b)	
ISET 1450 Heating Ventilation Air Conditioning/ Refrigeration I	2
ISET 1460 Fundamental Boiler Technology	3
ISET 2450 Heating Ventilation Air Conditioning/ Refrigeration II	2
ISET 2460 Applied Boiler Technology	2

<u>(c)Welding</u>	<u>Credits</u>
Welding, Option (c)	
ISET 1100 Welding Blue Print Reading	2
ISET 2100 Gas Metal Arc Welding (MIG) ¹	4
ISET 2110 Gas Tungsten Arc Welding (TIG) ¹	4
ISET 2120 Shielded Metal Arc Welding (STIG) ¹	4
ISET 2130 OxyFuel Gas Welding	4

¹MATH-1800-1820 may not be used to meet this requirement.
²Students pursuing Welding option must complete two different welding courses to meet degree requirements.
³Consecutive eight week course.

C = Capstone course.

MECHATRONICS

Certificate of Proficiency

The purpose of the program is to familiarize students with supporting concepts of mechatronics which is defined as a design process that includes a combination of mechanical engineering, electrical engineering, control engineering and computer engineering. It therefore is a multidisciplinary field. Supporting courses include programming, electronics, fluid power, etc., that will provide the student with a broad familiarity with supporting topics.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate in a lab environment using instrumentation ohms law, power laws for Direct Current (DC) and Alternation Current (AC) circuits.
2. Demonstrate welding blue print reading skills by performing stick welding operation to specification on a specimen
3. Use instrumentation to demonstrate fluid pressure and volume in a laboratory environment and explain the relationship between hydraulic piston area and pressure.
4. Program a Programmable Logic Controller to solve a stated problem
5. Demonstrate programming skills in a robotics environment to solve a stated problem. Use math to determine program behavior

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1100	Welding Blue Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I ¹	3
ISET-1420	Applied Electricity II	3
		<u>12</u>

<u>Second Semester</u>		<u>Credits</u>
ISET-2120	Shielded Metal Arc Welding (STICK)	4
ISET-1320	Fundamentals of Fluid Power	2
ISET-2200	Industrial Motor Controls	3
EET-1100	Introduction to Robotics	2
		<u>11</u>

<u>Summer Semester</u>		<u>Credits</u>
ISET-2500	Programmable Logic Controllers Maintenance I ²	3
ISET-2510	Programmable Logic Controllers Maintenance II	2
ISET-2520	Programmable Logic Controllers Maintenance III	2
		<u>7</u>
	PROGRAM TOTAL	30

¹ISET-1410, 1st 8 week course, must be completed before ISET-1420. Concurrent enrollment ISET-1300, Mechanical/Electrical Print Reading.

²ISET-2500, PLC Maintenance I, 1st 5 or 8 week course, must be completed before ISET-2510, PLC Maintenance II.

INTERIOR DESIGN

Associate of Applied Business degree in Interior Design

The interior designer helps to solve the functional and aesthetic design problems in residential and commercial interiors. The program prepares students for employment in interior design studios, architectural firms, and industry related fields.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively verbally, in writing and through technology with clients, colleagues and industry professionals within the architectural and design community through an integrated design process.
2. Identify the needs of the client and work with members of the design team to professionally articulate design solutions.
3. Implement the scope of project through professional and ethical practice within the context of a global marketplace. Apply knowledge of business procedures to the design process through business forms, software and communication streams.
4. Recognize laws, codes, and standards that impact a design project and know where to research guideline information. Demonstrating competency in accessibility guidelines, universal design, and fire and life safety.
5. Execute design projects through the entire design process. Apply knowledge of design and architecture history, space planning, product knowledge, color, lighting, sustainable practices, building and environmental systems and construction to identify simple and complex problems and create design project goals. Developing creative solutions to present to client.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
ART-2020	Art History Survey: Prehistoric to Renaissance	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
INTD-1100	Hand Drafting and Sketching for Interiors	2
INTD-1111	Introduction to Interior Design	3
		<u>14</u>

<u>First Semester</u>		<u>Credits</u>
ART-1050	Drawing I	3
ART-2030	Art History Survey: Late Renaissance to Present	3
INTD-1120	Architectural Drafting for Interiors I	3
INTD-2330	Interior Design Materials and Sources	3
MATH-1xxx	1000-level MATH course or higher	3
		<u>15</u>

<u>Second Semester</u>		<u>Credits</u>
ART-1091	Color Theory and Application	3
INTD-1130	Architectural Drafting for Interiors II	3
INTD-2320	History of Interiors	3
INTD-2380	Fundamentals of Lighting	3
INTD-2430	Architectural Materials and Methods	3
		<u>15</u>

(continued on next page)

INTERIOR DESIGN (Continued)

<u>Third Semester</u>		<u>Credits</u>
INTD-2300	Interior Design Studio I	3
INTD-2350	Textiles	3
INTD-2470	Professional Practice of Interior Design	3
VC&D-1015	Digital Studio Basics	<u>3</u>
		12
<u>Fourth Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
INTD-2400	Interior Design Studio II	3
INTD-2460	Interior Design Presentation	3
INTD-2851	Interior Design Field Experience C	1
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	<u>3</u>
		13
PROGRAM TOTAL		69

C = Capstone course.

INTERIOR DECORATING

Certificate of Proficiency

The interior decorator assists in providing solutions for aesthetic issues (furniture, color, textiles, and fabrics) in residential interiors and events. The certificate prepares students for employment in interior design sales and decorating.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally with clients, colleagues and industry professionals within the architectural and design community.
2. Identify the needs of the client and analyze what products or solutions are appropriate for their situation. Recommending appropriate selections for an interior space and closing the sale professionally and ethically.
3. Apply knowledge of office business procedures, policies, equipment, software and communication streams.
4. Implement the scope of project through professional practices and design sales protocols.
5. Apply knowledge of design and architecture history, furniture and furniture layouts, product knowledge, color, and lighting to develop creative solutions for the client.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
ART-2020	Art History Survey: Prehistoric to Renaissance	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
INTD-1100	Hand Drafting and Sketching for Interiors	2
INTD-1111	Introduction to Interior Design	3
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		14

<u>First Semester</u>		<u>Credits</u>
ART-2030	Art History Survey: Late Renaissance to Present	3
INTD-1300	Color and Light in Interiors	3
INTD-2330	Interior Design Materials and Sources	3
PSY-1010	General Psychology	<u>3</u>
		12
<u>Second Semester</u>		<u>Credits</u>
INTD-1330	Coordinating Spaces	3
INTD-1350	Business of Interiors	3
INTD-1400	Interior Decorating Field Experience	1
INTD-2320	History of Interiors	<u>3</u>
		10
PROGRAM TOTAL		36

MANUFACTURING INDUSTRIAL ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Manufacturing Industrial Engineering Technology

The Manufacturing Industrial Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). Manufacturing is instrumental to the function of society today and will remain indispensable for the future. This program ensures application of appropriate manufacturing processes and cost effective utilization of manufacturing tools, materials, equipment and manpower to manufacture parts and maintain equipment. The program provides graduates with a unique blend of theoretical and hands-on-knowledge with computer integration in a manufacturing environment that directly corresponds to modern applications used in industry. Graduates are employed in a wide variety of areas relevant to manufacturing industries. (Certificate programs are available in 3D Digital Design and Manufacturing Technology, Digital Design & Product Launch, Computer-Aided Drafting, Computer-Integrated Manufacturing, Machine Tools Operation, and Quality Control.)

Program Admission Requirements: Applications may be submitted to the Engineering Office MHCS 122 on the Metropolitan Campus after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H
- Complete MATH-1280
- Complete the following: MET-1100, MET-1120, MET-1230, and MET-1240.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

(continued on next page)

Program Sequences

MANUFACTURING INDUSTRIAL ENGINEERING TECHNOLOGY (Continued)

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect work and as a way of life, including machine safety, environmental safety, chemical safety, and personal\employee protection.
5. Apply knowledge of machines' principles and operation, tools and materials, requisite mathematics and physics, to select operation parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to, troubleshoot and diagnose both numerically/computer numerically (NC/CNC) controlled machines, and programmable logic controlled (PLC) equipment.
6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.
9. Exhibit independence in the pursuits of continuous professional development.
10. Model ethical behavior in professional responsibilities.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD ¹	3
MET-1240	Machine Tools and Manufacturing Processes	3
		18

<u>Second Semester</u>		<u>Credits</u>
MET-1300	Engineering Materials and Metallurgy	3
MET-1400	CNC Programming and Operation	3
MATH-1510	Trigonometry ... OR	3
MATH-151H	Honors Trigonometry	
MET-2000	CAD/CAM Processes ... OR	3
MET-1250	Introduction To Additive Manufacturing	
MET-2421	Fundamentals of Engineering Economics	2
		14

<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MET-2041	CAD II & GD&T ... OR	3
MET-2940	Additive Manufacturing Internship I	1
MET-xxxx	Elective ² ... OR	3
CNST-1410	Architectural CAD I	
PHYS-1210	College Physics I ³	4
MET-xxxx	Elective	3
		14 - 16

<u>Fourth Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
MET-2500	Fundamentals of Products Development and Manufacture C ... OR	3
MET-2190	Additive Manufacturing Project Based/Team Oriented Capstone	
MET-xxxx	Elective	3
PHYS-1220	College Physics II	4
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	3
		14

PROGRAM TOTAL 60 - 62

ELECTIVES

Automation Engineering Technology Credits

Electives recommended for students interested in the field of Automation Engineering Technology:

MET 2140	Manufacturing Automation and Control	3
MET 2220	Advanced CAD/CAM Processes	3
MET 2300	Fluid Power	3

Drafting & Design Engineering Technology Credits

Electives recommended for students interested in the field of Drafting & Design Engineering Technology:

CNST 1410	Architectural CAD I	3
MET 2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET 2601	3D Solid Modeling	3

Quality Engineering Technology Credits

Electives recommended for students interested in the field of Quality Engineering Technology:

MET 2400	Statistical Quality Control	3
MET 2730	Lean Manufacturing	3
MET 2740	Quality Manufacturing	3

Additive Manufacturing Credits

Electives recommended for students interested in the field of Additive Manufacturing

MET 1260	Product Ideation and Design	3
MET 2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET 2601	3D Solid Modeling	3

¹MET-1220 & 1200 together will be accepted in place of MET-1230.

²Students interested in pursuing all of the quality engineering elective courses, must take MET-2400 in the third semester, as it is a prerequisite for MET-2740.

³PHYS 2310 & PHYS 2320 will be accepted in place of PHYS-1210 & PHYS-1220. PHYS 2310 & PHYS 2320 are recommended for students planning to transfer.

C = Capstone course.

3D DIGITAL DESIGN & MANUFACTURING TECHNOLOGY

Certificate of Proficiency

This program is for the students who wish to acquire skills in the operations of Coordinate Measuring Machines (CMM), Computer Numerically Controlled (CNC), 3D printing, and the use of CAD/CAM packages in order to gain entry-level employments in varying operations involved in manufacturing with emphases on Additive Manufacturing. Students will get background knowledge to aid them in the field of (AM) Additive Manufacturing, (RP) Rapid Prototyping, and 3D Printing. The students will also be prepared to take the examination for the nationally recognized SME/MSOE/NAMII Certification in Additive Manufacturing. There will be two (2) short term certificates: 1) Digital Design & Product Innovation, 2) Digital Manufacturing & Product Launch, which together, lead to the award of Certificate of Proficiency in 3D Digital Design & Manufacturing Technology. Students may apply credits earned in this program toward the completion of Associate of Applied Science (AAS) degree in Manufacturing Industrial Engineering Technology.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

Program Admission Requirements:

- Obtain Program Application from the program coordinator (UTC 171), program manager (UTC 170), or career coordinator (UTC Registration).
- High School Diploma or GED
- ENG 0990
- MATH-0960 or MATH-0980 or eligibility for MATH-1280.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of machines' principles and operation, tools and materials to select operations' parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to troubleshoot and diagnose 3D Printers, Laser Scanners, (CMM) Coordinate Measuring Machines, and (CNC) Computer Numerically Controlled machines.

6. Apply the knowledge of material science, machine tolerances, blueprint/schematics, and hands on skills in Additive Manufacturing equipment for the development of designed parts and incorporating accepted industry methods.
7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1250	Introduction To Additive Manufacturing	3
MET-1260	Product Ideation and Design	3
		12

<u>Second Semester</u>		<u>Credits</u>
MET-1100	Technology Orientation	2
MET-1300	Engineering Materials and Metallurgy	3
MET-2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET-2421	Fundamentals of Engineering Economics	2
MET-2601	3D Solid Modeling	3
		13

<u>Summer Semester</u>		<u>Credits</u>
MET-1400	CNC Programming and Operation	3
MET-2190	Additive Manufacturing Project Based/Team Oriented Capstone	3
MET-2940	Additive Manufacturing Internship	1/7
	PROGRAM TOTAL	32

DIGITAL DESIGN & PRODUCT INNOVATION

Short-Term Certificate

This short-term certificate is one of the two programs, which, upon completion, lead to the award of a certificate of proficiency in Additive Manufacturing. This program is intended for students who wish to gain employment in modern manufacturing enterprises, involving but not limited to additive manufacturing. The skills and concepts taught also prepare students to take the nationally recognized Society of Manufacturing Engineering (SME)-Additive Manufacturing Consortium's Certification in Additive Manufacturing.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

Program Admissions Requirements:

- Obtain Program Application from the program coordinator (UTC 171), program manager (UTC 170), or career coordinator (UTC Registration).
- High School Diploma/GED
- Completion of ENG-0990 or higher.
- Completion of MATH-0950 or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1250	Introduction To Additive Manufacturing	3
MET-1260	Product Ideation and Design	<u>3</u>
		12
<u>Second Semester</u>		<u>Credits</u>
MET-1100	Technology Orientation	2
MET-2421	Fundamentals of Engineering Economics	<u>2</u>
		4
	PROGRAM TOTAL	16

DIGITAL MANUFACTURING AND PRODUCT LAUNCH

Short-Term Certificate

This short-term certificate is one of the two programs, which, upon completion, lead to the award of certificate of proficiency in Additive Manufacturing. This program is intended for students who wish to gain employment in modern manufacturing enterprises, involving but not limited to additive manufacturing. The skills and concepts taught also prepare students to take the nationally recognized Society of Manufacturing Engineering (SME)-Additive Manufacturing Consortium's Certification in Additive Manufacturing. This is a stackable certificate program that requires completion of the short term certificate in Digital Design & Product Innovation prior to starting this program.

Degree: Students may apply credits toward the manufacturing Industrial Engineering Technology degree program.

Program Admissions Requirements:

- Obtain Program Application from the program coordinator (UTC 171), program manager (UTC 170), or career coordinator (UTC Registration).
- High School Diploma/GED
- Completion of ENG-0990 or higher.
- Completion of MATH-0950 or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of machines' principles and operation, tools and materials to select operations' parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to troubleshoot and diagnose 3D Printers, Laser Scanners, (CMM) Coordinate Measuring Machines, and (CNC) Computer Numerically Controlled machines.
6. Apply the knowledge of material science, machine tolerances, blueprint/schematics, and hands on skills in Additive Manufacturing equipment for the development of designed parts and incorporating accepted industry methods.

7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.
8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
MET-1300	Engineering Materials and Metallurgy	3
MET-2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET-2601	3D Solid Modeling	$\frac{3}{9}$
<u>Second Semester</u>		<u>Credits</u>
MET-1400	CNC Programming and Operation	3
MET-2190	Additive Manufacturing Project Based/ Team Oriented Capstone	3
MET-2940	Additive Manufacturing Internship I	$\frac{1}{7}$
PROGRAM TOTAL		16

COMPUTER-AIDED DRAFTING (CAD)

Certificate of Proficiency

This program is for students who wish to acquire computer drafting skills for entry-level positions in a variety of industries. Students will get background knowledge to aid them in developing 2D drawings with an introduction to 3D CAD.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes and product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Utilize modern CAD tools and technology and appropriate engineering drafting principles to create and revise drawings that meet design and quality specifications.
6. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD ¹	3
		15

Second Semester		Credits
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1300	Engineering Materials and Metallurgy	3
MET-1400	CNC Programming and Operation	3
MET-2041	CAD II & GD&T	3
MET-2601	3D Solid Modeling	3
		15

PROGRAM TOTAL 30

¹MET-1200 & 1220 together will be accepted in place of MET-1230.

COMPUTER-INTEGRATED MANUFACTURING (CIM)

Certificate of Proficiency

This program is for students who wish to acquire skills in the 2D/3D modeling of engineering designs and graphics based programming and production of engineering parts, and operation of computer integrated manufacturing systems. Graduates of this program qualify for entry-level employment in traditional and computer integrated modern manufacturing industries.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problem towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply knowledge of math, machine principles, tools and materials to operate and monitor CNC machines, modify CNC code that ensures quality outcomes.
6. Interpret geometrical dimensioning and tolerancing (GD&T) concepts: symbols, instructions used in establishing form, locations, and orientation tolerances of parts' features to ensure that quality engineering parts are machined and assembled to achieve desired functionality.
7. Apply operational principles, software, concepts, tools, equipment, and machines of Computer Integrated Manufacturing Systems (CIMS), including: programming CIMS to implement production scheduling, materials movement, parts production and quality control; and setting up and operating machine and interface equipment in a computer-integrated environment to produce quality parts at low and competitive costs.

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COMPUTER-INTEGRATED MANUFACTURING (CIM) (Continued)

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
		15
<u>Second Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MET-1400	CNC Programming and Operation	3
MET-2000	CAD/CAM Processes	3
MET-2140	Manufacturing Automation and Control	3
MET-2421	Fundamentals of Engineering Economics	2
MET-xxxx	Elective	1 - 3
		15 - 17
PROGRAM TOTAL		30 - 32

MACHINE TOOLS OPERATION

Certificate of Proficiency

This program provides a certificate of proficiency to students who wish to acquire skills in manual machine tools operations and programming of computer controlled machine tools for entry-level employment in the metal working industry.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program or the Mechanical Engineering Technology degree program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes and product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Apply the knowledge of material science, machining tolerances, the use of basic blueprint/schematics, hands on skills and machine operation for the manufacturing of parts.

6. Apply the knowledge of materials science, quality control concepts, blueprints/schematics reading and interpretation, and skills in machine tools operation and basic machine maintenance to accomplish the manufacture of engineering parts.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD ¹	3
MET-1240	Machine Tools and Manufacturing Processes	3
		15
<u>Second Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MET-1300	Engineering Materials and Metallurgy	3
MET-1400	CNC Programming and Operation	3
MET-2421	Fundamentals of Engineering Economics	2
MET-2000	CAD/CAM Processes	3
MET-xxxx	Elective	1 - 3
		15 - 17
PROGRAM TOTAL		30 - 32

¹MET-1200 & 1220 together will be accepted in place of MET-1230.

QUALITY CONTROL

Certificate of Proficiency

This certificate is geared to those seeking an entry position in the area of quality control in industry. Students are introduced to the quality control of mechanical parts and systems. Inspection of parts is done using the skills of blueprint reading of Geometric Dimensioning, Tolerancing and inspection tools and equipment. Application of math and communication principles.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement, data collection and statistical tools and technology to improve processes and product quality, and to enhance productivity.

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Program Sequences

QUALITY CONTROL (Continued)

- Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
- Interpret drawings using proper dimensioning, tolerancing for size and geometry, and proper industry standards and conventions.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
		16
<u>Second Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
MET-1400	CNC Programming and Operation	3
MET-2400	Statistical Quality Control	3
MET-2421	Fundamentals of Engineering Economics	2
MET-2500	Fundamentals of Products Development and Manufacture	3
MET-2730	Lean Manufacturing	3
		15
	PROGRAM TOTAL	31

MARKETING

Associate of Applied Business degree in Marketing

The program addresses the broad scope of activities performed in the buying and selling of goods and services to the consuming sectors of the economy. Students are prepared for a variety of marketing positions via a broad working knowledge of the theories and practices of marketing. General marketing, international marketing and professional selling are options.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Use interpersonal, organizational, time management, problem solving, office etiquette, professionalism and leadership skills when working independently or as part of a team on marketing projects.
- Apply basic business skills in achieving organizational goals including: strategic planning, inventory management, software, database skills, and customer relations and negotiation skills.
- Use general math, accounting principles and appropriate software to calculate pricing, cost of goods, break even, discounts, margins, profits, advertising measurements and produce budget reports.
- Communicate verbally, visually, and in writing effectively and efficiently to accomplish organizational goals in the areas of leadership, product development, project management and interpersonal relationships to achieve and maintain a prominent competitive position within the industry.

- Identify markets and customers; execute, evaluate, and control marketing mix elements (product, price, place, profit, promotion) to meet project goals.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
ECON-2620	Principles of Microeconomics	4
ENG-1010	College Composition IOR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications.....OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
SPCH-1010	Fundamentals of Speech Communication	3
		16
<u>Second Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
ENG-1020	College Composition IIOR	3
ENG-102H	Honors College Composition II	
MARK-2010	Principles of Marketing	3
MATH-1250	Contemporary Mathematics or higher ¹	4
		14
<u>Third Semester</u>		<u>Credits</u>
BADM-2160	Introduction to Purchasing	3
ECON-2610	Principles of Macroeconomics	4
MARK-2020	Principles of Salesmanship	3
MARK-2270	Principles of Advertising	3
PHIL-1020	Introduction to LogicOR	3
PHIL-2060	Business Ethics	-
		16
<u>Fourth Semester</u>		<u>Credits</u>
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2150	Business Law	4
BADM-2501	Business Strategies C	3
MARK-2260	Sales Promotion and Public Relations	3
MARK-2500	Business-to-Business/Organizational Marketing	3
		17
	PROGRAM TOTAL	63

¹MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher recommended for students planning to transfer.

C = Capstone course.

MASSAGE THERAPY

Associate of Applied Science degree in Massage Therapy

The Associate of Applied Science Degree in Massage Therapy provides students with the competencies that enable them to learn not only the basic massage therapy skills but also the advanced techniques in a clinical setting. Students will be eligible for massage licensure before completing this associate degree by receiving a Certificate of Proficiency in Massage Therapy. All of the credits in the certificate of proficiency are transferrable to the associate degree. Students who are awarded the associate degree will also receive the Short-Term Certificate in Advanced Massage Therapy.

Program Manager: 216-987-2426

Program Admission Requirements: Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- HS/GED Required. Official high school transcripts must be mailed directly to the Massage Therapy Program. Hand delivered or faxed transcripts will not be accepted.
- Eligibility for ENG-1010, or completion of ENG-0990, with a "C" or higher. Non-native English speaking applicants with a foreign country high school diploma: Completion of ESL-1310, English as a Second Language: Grammar for Communication III, and ESL-1320, English as a Second Language: Reading and Writing III, before acceptance to the Massage Therapy Program.
- Eligibility for MATH-1060 or MATH-1190, or completion of MATH-0950 or MATH-0990 with a "C" or higher.
- GPA. If courses already taken at Tri-C or other college/university, overall minimum of 2.5 GPA. (High school GPA is used for students without a college/university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."

Other Information:

- 25 in the day program and 25 in the evening/weekend program (a combined total of 50 each year which includes students in the Certificates and Degree programs).
- Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.
- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Accepted applicants are required to attend group orientation prior to the start of Fall Semester.
- All science and math courses must have been completed within seven years at the time of admission to the program.

- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- Massage Therapy students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with the Certificate of Proficiency or Post-Degree Certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board, but by some other states.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Health Careers criminal background check required (see page 73).
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student's ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

Program Outcomes: The Massage Therapy AAS program is designed to prepare students to demonstrate the following program outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general Swedish massage and hospital-based massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the OSMB licensure examination.
3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.
4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage and hospital-based massage.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage and hospital-based massage.

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Program Sequences

MASSAGE THERAPY (Continued)

7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy and hospital-based massage.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management, and team work skills needed in a clinic and hospital setting
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.
13. Use physical observation, verbal investigation and advanced assessment techniques to create and perform advanced treatment plan for disorders to the human body.
14. Educate the patient, within the scope of practice as defined by the State Medical Board of Ohio, on the principles of treatment used for specific disorders, proper body mechanics as well as suggest appropriate modalities.
15. Sit for State Medical Board of Ohio Massotherapy License and the NCBTMB.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MT-1242	Somatic Studies I	3
MT-1302	Massage Therapy I	2
MT-1312	Applied Musculo-Skeletal Anatomy	3
MT-2301	Pathology for Massage Therapists	3
MA-1010	Introduction to Medical Terminology	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	–
		16

<u>Second Semester</u>		<u>Credits</u>
EMT-1310	Cardiopulmonary Resuscitation	1
MT-1272	Somatic Studies II	3
MT-1331	Massage Therapy II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-2350	Massage Therapy Clinic I	3
PSY-1010	General Psychology ...OR	3
PSY-101H	Honors General Psychology	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		18

<u>Summer Session</u>		<u>Credits</u>
MATH-1060	Survey of Mathematics or higher	3
MT-1280	Somatic Studies III	2
MT-2360	Massage Therapy Clinic II	3
MT-2200	Medical Massage	2
MT-2701	Comprehensive Somatic Studies for Massage Therapists	1
MT-2991	Comprehensive Massage Therapy C	1
		12
<u>Third Semester</u>		<u>Credits</u>
BADM-1300	Small Business Management	4
MT-2311	Advanced Massage Therapy	3
MT-2870	Advanced Massage Practicum	2
PHIL-2050	Bioethics ...OR	3
PHIL-205H	Honors Bioethics	
PSY-2020	Life Span Development ...OR	4
PSY-202H	Honors Life Span Development	–
		16
	PROGRAM TOTAL	62

C = Capstone course.

ADVANCED MASSAGE THERAPY

Short-Term Certificate

This certificate offers graduates of the Post-Degree Professional Certificate in Massage Therapy and Certificate of Proficiency in Massage Therapy and Associate of Applied Degree students in Massage Therapy, advanced bodywork training which enhances a massage therapist's career by preparing them for positions in specialized areas of massage therapy.

Students graduating with the AAS degree in Massage Therapy will also receive the Short-Term Advanced Massage Therapy Certificate.

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- Must be awarded a Certificate of Proficiency or Post-Degree Professional Certificate in Massage Therapy
- Submit an "Intention to Complete the Short-Term Certificate" to the Massage Therapy Program. Call 216-987-2418 for more information.
- High School Diploma/GED.
- Overall minimum of 2.5 GPA. (High school GPA is used for students without a college/ university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an overall and/or MT course GPA below 2.5, but no lower than 2.0 will be placed on Conditional Status.

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ADVANCED MASSAGE THERAPY (Continued)

Other Information:

- All students graduating with an Associate of Applied Science Degree in Massage Therapy will also receive the Short-Term Certificate in Massage Therapy.
- Students must submit evidence of good health and required immunizations before acceptance to program. Students will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use physical observation, verbal investigation and advanced assessment techniques to create and perform advanced treatment plan for disorders to the human body.
2. Educate the patient, within the scope of practice as defined by the State Medical Board of Ohio, on the principles of treatment used for specific disorders, proper body mechanics as well as suggest appropriate modalities.
3. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage.
4. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy.
5. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic setting.
6. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
7. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
8. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
MT-2200	Medical Massage	2
MT-1321	Functional Assessment in Massage Therapy	2
		4
<u>First Semester</u>		<u>Credits</u>
MT-2311	Advanced Massage Therapy	3
MT-2870	Advanced Massage Practicum	2
		5
PROGRAM TOTAL		9

MASSAGE THERAPY

Certificate of Proficiency

The Certificate of Proficiency in Massage Therapy is an 800-hour program which enables full-time students to graduate in one year and then sit for the Federation of State Massage Therapy Boards' Massage and Bodywork Licensing Examination (MBLEx). All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx. Students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with this certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board, but is accepted by some other states. Also after completing this certificate students can transfer all of the credits to the Associate of Applied Science Degree in Massage Therapy program. Students who are awarded the associate degree will also receive the Short-Term Certificate in Advanced Massage Therapy.

Program Admission Requirements: Application must be submitted to the Massage Therapy Program Office at the Eastern Campus:

- High School Diploma/GED. Official transcripts must be mailed directly to the Massage Therapy program. Hand delivered or faxed transcripts will not be accepted.
- Eligibility for ENG-1010, or completion of ENG-0990, with a "C" or higher.
- Non-native English speaking applicants with a foreign country high school diploma: Completion of ESL-1310, English as a Second Language: Grammar for Communication III, and ESL-1320, English as a Second Language: Reading and Writing III, before acceptance to the Massage Therapy Program.
- Eligibility for MATH-1060 or MATH-1190, or completion of MATH-0950 or MATH-0990 with a "C" or higher.
- GPA. If courses already taken at Tri-C or other college/university, overall minimum of 2.5 GPA. (High school GPA is used for students without a college/university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."

Other Information:

- 25 students accepted per year for day program and 25 per year for evening/weekend program (a combined total of 50 each year which includes students in certificates and degree programs).
- Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.

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MESSAGE THERAPY (Continued)

- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Accepted applicants are required to attend group orientation prior to the start of Fall Semester.
- All science courses must have been completed within seven years at the time of admission to the program.
- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- Massage Therapy students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with the Certificate of Proficiency or Post-Degree Certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Criminal background check required (see page 73).
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student's ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCI and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general Swedish massage and hospital-based massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the OSMB licensure examination.

3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.
4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage and hospital-based massage.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage and hospital-based massage.
7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy and hospital-based massage.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic and hospital setting.
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.
13. Sit for State Medical Board of Ohio Massotherapy License and the NCBTMB.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MT-1242	Somatic Studies I	3
MT-1302	Massage Therapy I	2
MT-1312	Applied Musculo-Skeletal Anatomy	3
MT-2301	Pathology for Massage Therapists	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	—
		14

<u>Second Semester</u>		<u>Credits</u>
MT-2350	Massage Therapy Clinic I	3
MT-1331	Massage Therapy II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1272	Somatic Studies II	3
		11

<u>Summer Semester</u>		<u>Credits</u>
MT-1280	Somatic Studies III	2
MT-2360	Massage Therapy Clinic II	3
MT-2200	Medical Massage	2
MT-2701	Comprehensive Somatic Studies for Massage Therapists	1
MT-2991	Comprehensive Massage Therapy	1
		9

PROGRAM TOTAL 34

MASSAGE THERAPY

Post-Degree Professional Certificate

The Post-Degree Professional Certificate is for students who already have an associate, bachelor, or higher degree and want to become licensed massage therapists. This 800-hour program enables full-time students to graduate in one year and then sit for the Federation of State Massage Therapy Boards' Massage and Bodywork Licensing Examination (MBLEx). All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx. Students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with this certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board, but is accepted by some other states. Post-Degree Professional Certificate Students can return after graduation and complete the Short-Term Certificate in Advanced Massage Therapy, which offers advanced bodywork training that enhances a licensed massage therapist's career.

Program Manager: 216-987-2426

Program Admission Requirements: Massage Therapy Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- High School Diploma/GED. Official high school transcripts must be mailed directly from the educational institution to the Massage Therapy Program. Hand delivered and faxed transcripts will not be accepted.
- GPA required: Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."

Other Information:

- 25 students accepted per year for day program and 25 per year for evening/weekend program (a combined total of 50 each year which includes students in degree and certificate programs).
- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Associate, Bachelor or higher degree required from a recognized institution. Official college/university transcripts must be mailed directly from the educational institution to the Massage Therapy Program and Tri-C Office of the Registrar. Hand delivered and faxed transcripts will not be accepted.
- Non-native English Speaking Applicants with foreign country college degree: Completion of ESL-1310, English as a Second Language: Grammar for Communication III, and ESL-1320, English as a Second Language: Reading and Writing III before acceptance to the Massage Therapy Program.
- Tri-C Health Careers Criminal background check required (see page 73).
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student's ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants

for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.
- Accepted applicants are required to attend group orientation prior to the start of Fall Semester.
- All science courses must have been completed within seven years at the time of admission to the program.
- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- Massage Therapy students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with the Certificate of Proficiency or Post-Degree Certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board but by some other states.
- All massage courses in the sequence can only be repeated once to improve a grade.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general Swedish massage and hospital-based massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the OSMB licensure examination.
3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.

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MASSAGE THERAPY (Continued)

4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage and hospital-based massage.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage and hospital-based massage.
7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy and hospital-based massage.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic and hospital setting.
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.
13. Sit for State Medical Board of Ohio Massage Therapy License and the NCBTMB.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MT-1242	Somatic Studies I	3
MT-1302	Massage Therapy I	2
MT-1312	Applied Musculo-Skeletal Anatomy	3
MT-2301	Pathology for Massage Therapists	3
		11
<u>Second Semester</u>		<u>Credits</u>
MT-1331	Massage Therapy II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1272	Somatic Studies II	3
MT-2350	Massage Therapy Clinic I	3
		11
<u>Summer Session</u>		<u>Credits</u>
MT-1280	Somatic Studies III	2
MT-2200	Medical Massage	2
MT-2360	Massage Therapy Clinic II	3
MT-2701	Comprehensive Somatic Studies for Massage Therapists	1
MT-2991	Comprehensive Massage Therapy	1
		9
	PROGRAM TOTAL	31

MECHANICAL ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Mechanical Engineering Technology

The Mechanical Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). It is designed to prepare students to pursue a career in the areas of design, development, manufacturing, installation, measurement, testing, operation and control, maintenance and sales of mechanical devices and systems. The curriculum emphasizes hands-on-learning and the use of current computer-aided techniques found in industry. Graduates are employed in a variety of industries such as automotive, manufacturing, aero-space, construction, transportation, power generation, petrochemical, as well as in research and development laboratories. Skills in the area of creating and interpreting engineering drawings, the practices and procedures of manufacturing, and principles of product design are emphasized.

Program Admission Requirements: Applications may be submitted to the Engineering Office MHCS 122 on the Metropolitan Campus after meeting the following requirements:

- High School Diploma/GED
- ENG-1010 or ENG-101H
- MATH-1280
- Complete the following: MET-1100, MET-1200, MET-1240

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.
2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.
3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.
4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.
5. Utilize modern tools and technology (CAD/CAE) and apply appropriate engineering design principles, to design or assist in the design, testing and troubleshooting of manufacturable quality products, such as mechanisms and primary drives, including mechanical drive, power transmission, hydraulics, and pneumatics systems.
6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.

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MECHANICAL ENGINEERING TECHNOLOGY (Continued)

7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.
8. Engage in life-long learning to adapt to innovation and change.
9. Model ethical behavior in professional engagements.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra ¹	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1510	Trigonometry ¹ ... OR	3
MATH-151H	Honors Trigonometry ¹	
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1300	Engineering Materials and Metallurgy	3
MET-1601	Technical Statics	3
PHYS-1210	College Physics I ²	<u>4</u>
		19

<u>Third Semester</u>		<u>Credits</u>
MET-1621	Technical Dynamics	3
MET-2041	CAD II & GD&T	<u>3</u>
MET-2200	Strength of Materials	3
MET-2240	Mechanical Engineering Lab	1
MET-2300	Fluid Power ... OR	3
MET-2320	Thermal Dynamics	
PHYS-1220	College Physics II ²	4
		17

<u>Fourth Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
MET-2601	3D Solid Modeling	3
MET-2700	Machine Design C	4
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	3
Arts & Hum	(see AAB/AAS degree requirements)	<u>3</u>
		14

PROGRAM TOTAL 65

¹MATH-1580 & MATH-1610 will be accept in place of MATH-1280 & 1510

²PHYS 2310 & PHYS 2320 will be accepted in place of PHYS 1210 & PHYS 1220

C = Capstone course.

MEDIA ARTS AND STUDIES

Associate of Applied Business degree in Media Arts and Studies

In the associate degree program, the student will receive a general education in the appreciation and application of traditional art and design to motion media, along with the fundamentals of tactical, strategic communications. Each student will experience an in-depth exercise in devising media strategies to fulfill specific communications missions. Each student will learn the fundamentals of every aspect of the media production process. Following this, students will be enabled to specialize in a single aspect of that process and will develop familiarity and expertise in their chosen craft. The program offers specialty training in Video Editing, Motion Graphics, and Production.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010

Other Information:

- Non-degree students may enroll in individual courses if they meet prerequisites.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.
2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.
3. Apply the basics of digital video filmmaking production following set protocol including camera operation, lighting, audio production and producing skills.
4. Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.
5. Apply the appropriate writing style and visual design principles for a given medium that meets the production goal and persuades the audience to action.
6. Create a production plan and schedule that meets client needs, uses resources appropriately and is on time and within budget.
7. Communicate verbally and in writing to clients to secure and maintain business.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
VC&D-1015	Digital Studio Basics	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
VCPH-1261	Photography I ¹	<u>3</u>
		15

(continued on next page)

Program Sequences

MEDIA ARTS AND STUDIES (Continued)

<u>Second Semester</u>		<u>Credits</u>
JMC-1310	Film Appreciation	3
MARS-1120	Media Arts and Studies Colloquium	1
MATH-1060	Survey of Mathematics or higher	3
RAT-1100	Sound Recording and Design	3
VC&D-1430	2D Design	3
VCDV-2180	Digital Cinematography	3
		16

<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MARS-2110	Editing	3
MARS-2620	Applied Integrated Media (AIM) I: Real World Pre-production	3
VCDV-2480	Motion Graphics for Digital Video	3
VCDV-2280	Advanced Digital Video and Digital Filmmaking: Exploring Genre and Technique	3
XXXX	Select 1 elective from below list	3
		18

<u>Fourth Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
MARS-2720	Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media ²	3
MARS-2990	Media Arts and Studies Professional Prep and Portfolio Review C	2
XXXX	Select 1 elective from below list	3
Social & Behavioral Sci	(See AAB/AAS degree requirements)	3
		14

<u>Summer Semester</u>		<u>Credits</u>
MARS-2940	MARS Field Experience	1 - 2
		1 - 2
	PROGRAM TOTAL	64 - 65

<u>ELECTIVES</u>		<u>Credits</u>
In the 3rd and 4th semesters, students choose a three-credit course from the following courses as an elective or they may choose another 2000-level technical elective in the related disciplines of MARS, RAT, JMC, VC&D.		
MARS 2120	Advanced Editing	3
MARS 2220	Advanced Crew and Set Operations for Motion Media	3
MARS 2xxx	Media Arts and Studies Elective	3
VC&D 2815	3D Studio	3
VC&D 2816	3D Game Design	3
VCDV 2380	Visual Effects Compositing for Digital Video	3
VCDV 2580	Digital Versatile Disk Authoring & Design	3
VCDV 2680	Advanced Digital Cinematography	3
VCDV 2780	Advanced Motion Graphics	3

¹May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.

²Course may be repeated for elective credit.

C = Capstone course.

MEDIA ARTS AND STUDIES (Motion Graphics and Visual Storytelling)

Short-Term Certificate

This Short-Term Certificate in Motion Graphics will appeal to both newcomers and seasoned professionals in the areas of broadcast television, corporate and event video, web design and animation, who seek to demonstrate a level of proficiency in using animated text and images to communicate a message and enhance production value for digital film and motion media productions.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.
2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.
3. Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.
4. Apply knowledge of mission and story structure to produce a written treatment and storyboards for a motion media production.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
MARS-1120	Media Arts and Studies Colloquium	1
VC&D-1015	Digital Studio Basics	3
VC&D-1430	2D Design	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
VCPH-1261	Photography I ¹	3
		16

<u>Second Semester</u>		<u>Credits</u>
VCDV-2480	Motion Graphics for Digital Video	3
VCIM-2270	Animation for the Web and Media ... OR	3
ART-2151	Animation for Web and Media	
VCPH-1450	Digital Imaging I	3
		9

<u>Third Semester</u>		<u>Credits</u>
VCDV-2780	Advanced Motion Graphics	3
		3
	PROGRAM TOTAL	28

¹May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.

MEDIA ARTS AND STUDIES (Digital Video Editing)

Short-Term Certificate

These courses are selected from the Media Arts and Studies degree sequence to provide a streamlined path to proficiency in video editing and digital storytelling.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.
2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.
3. Use industry-standard motion media editing software applications to professionally edit motion media projects.
4. Apply knowledge of mission and story structure to produce a written treatment and storyboards for a motion media production.
5. Create a production plan and schedule that meets a client needs, uses resources appropriately and is on time and within budget.
6. Communicate verbally and in writing to clients to secure and maintain business.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
VC&D-1015	Digital Studio Basics	3
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
MARS-1120	Media Arts and Studies Colloquium	1
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
		10
<u>Second Semester</u>		<u>Credits</u>
MARS-2xxx	Media Arts and Studies Elective	3
MARS-2110	Editing	3
		6
<u>Summer Semester</u>		<u>Credits</u>
MARS-2120	Advanced Editing	3
		3
	PROGRAM TOTAL	19

MEDICAL ASSISTING

Associate of Applied Science degree in Medical Assisting

The Medical Assistant is a multi-skilled professional who assists the physician with the administrative and clinical aspects of patient care. The program includes courses in administrative, clinical, and communication skills; ethical and legal standards of medical practice; and a "hands on" clinical practicum experience. Graduates are eligible to take the National Certifying Examination given by the American Association of Medical Assistants (AAMA).

Program Manager: 216-987-4439

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- Students must request an application packet from the Health Careers Enrollment Center (216-987-4247) for comprehensive admissions information.
- High School Diploma/GED
- Completion of ENG-1010 or ENG-101H with a grade of "C" or higher.
- Completion of MATH-1060 or higher, with a grade of "C" or higher.
- Demonstrate a typing speed of 40 wpm on proficiency exam administered in the Nursing and Allied Health Career's Student Success Center (Metropolitan Campus), or a keyboarding course such as IT-1000 with a grade of "B" or higher, or AOS-1220 Speed Building for those students familiar with the keyboard but need to increase their speed.
- GPA required: 2.00 overall

Other Information:

- 20 students per campus accepted per year
- Criminal background check required (see page 73).
- One year (two semesters) Medical Assisting Certificate of Proficiency available.
- Non-native English applicants: TOEFL minimum iBT score of 25 required in speaking component, and minimum iBT score of 21 required in listening component, minimum iBT score of 23 in writing component, and minimum iBT score of 21 in reading component.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify, administer and document medications based on usage outcomes, side effects and according to the principles of the six rights.
2. Collect, process and test diagnostic specimens and document follow-up on results.
3. Apply current up-to-date quality control and safety principles in the workplace.
4. Skillfully perform and document routine clinical procedures according to office protocol.
5. Perform and document routine administrative procedures according to office protocol.
6. Effectively apply verbal, nonverbal and written communication principles and skills in the workplace.

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Program Sequences

MEDICAL ASSISTING (Continued)

7. Maintain ethical standards and confidentiality for patient privacy and practice integrity.
8. Demonstrate professional work ethics with efficient use of multitasking skills, technology, time management, self management and teamwork.

Suggested Semester Sequence		<u>Credits</u>
<u>Summer Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1060	Survey of Mathematics or higher	3
		6
<u>First Semester</u>		<u>Credits</u>
HTEC-1610	Introduction to Pharmacology	2
MA-1020	Medical Terminology I	3
MA-1321	Medical Office Laboratory Procedures	2
MA-132L	Medical Office Laboratory Procedures	1
MA-1401	Basic Clinical Medical Assisting	1
MA-140L	Basic Clinical Medical Assisting Lab.	1
MA-1503	Administrative Procedures for the Medical Office	2
MA-150L	Administrative Procedures Laboratory	1
		13
<u>Second Semester</u>		<u>Credits</u>
EMT-1310	Cardiopulmonary Resuscitation	1
MA-1110	Reimbursement for Physician Services	2
MA-2010	Medical Terminology II	2
MA-2412	Advanced Clinical Medical Assisting	2
MA-241L	Advanced Clinical Assisting Lab	1
MA-2860	Medical Assisting Practicum C	2
MA-2980	Medical Assisting Seminar	1
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	-
		14
<u>Third Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory ¹	1
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
HIM-1112	Physician Office Coding	4
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		14
<u>Fourth Semester</u>		<u>Credits</u>
BADM-1300	Small Business Management	4
MLT-1300	Introduction to Blood Collection	3
MLT-1850	Medical Laboratory Practicum I	3
MLT-2970	Advanced Phlebotomy	1
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		14
PROGRAM TOTAL		61

C = Capstone course.

¹BIO-2331 & 2341 together will be accepted in place of BIO-1050 & 105L.

MEDICAL ASSISTING

Certificate of Proficiency

The Medical Assistant is a multi-skilled professional who assists the physician with the administrative and clinical aspects of patient care. The program includes courses in administrative, clinical and communication skills; ethical and legal standards of medical practice; and a "hands on" clinical practicum experience in the health care industry. The Medical Assisting Certificate program is two semesters in length for full time students. Graduates of the one-year program are eligible to take the National Certification Examination given by the American Association of Medical Assistants.

Degree: Graduates may transfer directly into the Medical Assisting Degree program.

The Cuyahoga Community College Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), on recommendation of the Curriculum Review Board of the American Association of Medical Assistants Endowment (AAMAE). Commission on Accreditation of Allied Health Education Programs: 1361 Park Street, Clearwater, FL 33756. 727.210.2350.

Program Manager - 216-987-4439

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- High School Diploma/GED
- Completion of ENG-1010 with a "C" grade or higher.
- Completion of MATH-1060 or higher with a "C" grade or higher.
- GPA required: 2.00 overall
- Demonstrate a typing speed of 40wpm on proficiency exam administered in the Nursing and Allied Health Career's Student Success Center (Metropolitan Campus), or a keyboarding course such as IT-1000 with a grade of "B" or higher, or AOS-1220 Speed Building for those students familiar with the keyboard but need to increase their speed.

Other Information:

- 20 students accepted per year
- Certificate of Proficiency is first year of AAS in Medical Assisting.
- Criminal background check required (see page 73).
- Non-native English applicants: TOEFL minimum iBT score of 25 required in speaking component, and minimum iBT score of 21 required in listening component, minimum iBT score of 23 in writing component, and minimum iBT score of 21 in reading component.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify, administer and document medications based on usage outcomes, side effects and according to the principles of the six rights.

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MEDICAL ASSISTING (Continued)

2. Collect, process and test diagnostic specimens and document follow-up on results.
3. Apply current up-to-date quality control and safety principles in the workplace.
4. Skillfully perform and document routine clinical procedures according to office protocol.
5. Perform and document routine administrative procedures according to office protocol.
6. Effectively apply verbal, nonverbal and written communication principles and skills in the workplace.
7. Maintain ethical standards and confidentiality for patient privacy and practice integrity.
8. Demonstrate professional work ethics with efficient use of multitasking skills, technology, time management, self management and teamwork.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
MATH-1060	Survey of Mathematics or higher	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		6

<u>First Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory ¹	1
HTEC-1610	Introduction to Pharmacology	2
MA-1020	Medical Terminology I	3
MA-1321	Medical Office Laboratory Procedures	2
MA-132L	Medical Office Laboratory Procedures	1
MA-1401	Basic Clinical Medical Assisting	1
MA-140L	Basic Clinical Medical Assisting Lab.	1
MA-1503	Administrative Procedures for the Medical Office	2
MA-150L	Administrative Procedures Laboratory	1
		17

<u>Second Semester</u>		<u>Credits</u>
EMT-1310	Cardiopulmonary Resuscitation	1
MA-1110	Reimbursement for Physician Services	2
MA-2010	Medical Terminology II	2
MA-2412	Advanced Clinical Medical Assisting	2
MA-241L	Advanced Clinical Assisting Lab	1
MA-2860	Medical Assisting Practicum	2
MA-2980	Medical Assisting Seminar	1
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	-
		14
	PROGRAM TOTAL	37

¹BIO-2331 & 2341 together will be accepted in place of BIO-1050 & 105L.

MEDICAL LABORATORY TECHNOLOGY

Associate of Applied Science degree in Medical Laboratory Technology

The Medical Laboratory Technician (or Clinical Laboratory Technician) works in a hospital, clinic, private or research laboratory performing a variety of diagnostic tests. The course of study includes mathematics, chemistry, anatomy and physiology, medical laboratory procedures, general education courses and one academic semester of clinical field experience. Graduates may be eligible to take national certification examinations like that offered by the American Society for Clinical Pathology (ASCP).

Program Manager: 216-987-4438

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete MATH-1410 or higher with "C" or higher.
- Complete the following:
 - Completion of CHEM-1020, MLT-1000 & MA-1020
 - Eligibility to enroll in BIO-2331 by sufficient score on Biology placement test or CHEM-1010 and CHEM-1020 with "C" or higher.
- GPA required: 2.50 admissions requirements. 2.50 overall

Other Information:

- 15 students accepted per year
- All science and math courses must have been completed within seven years of application submission, and may only be repeated once to improve a grade. Applicants with bachelor's or higher degree in sciences may have seven year limit on science and math courses waived (contact program manager).
- Criminal background check required (see page 73).
- Non-native English applicants required to take and pass TOEFL with minimum scores of: Reading 21, Listening 22, Writing 23, and Speaking 24.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Organize workflow using technology to produce efficient, detail oriented work and identify emergencies and use problem solving skills to resolve these issues.
2. Follow governmental, accreditation, and institutional guidelines in relationship to safety, infection control, confidentiality, and proficiency testing.
3. Practice consistent quality assurance through precise performance, monitoring, analyzing, and documenting of all quality testing.
4. Collect samples; perform testing procedures according to SOP; operate, maintain, and trouble shoot instrumentation; and keep accurate records.

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Program Sequences

MEDICAL LABORATORY TECHNOLOGY (Continued)

5. Interact with patients, staff and colleagues, using tact, courtesy, and respect.
6. Develop professionalism by adhering to institutional policies and practicing ethical standards as defined by accrediting boards.

Suggested Semester Sequence

<u>Program Admissions Requirements Semester</u>	<u>Credits</u>
CHEM-1020 Introduction to Organic Chemistry and Biochemistry ¹	4
ENG-1010 College Composition I ... OR	3
ENG-101H Honors College Composition	3
MA-1020 Medical Terminology I	3
MATH-1410 Elementary Probability and Statistics I ²	3
MLT-1000 Introduction to Medical Laboratory Technology	3
	16
<u>First Semester</u>	<u>Credits</u>
BIO-2331 Anatomy and Physiology I ³	4
MLT-1351 Problem Solving Techniques for the Medical Laboratory	2
MLT-1491 Urinalysis and Body Fluids	3
MLT-2461 Hematology	3
PHIL-2050 Bioethics	3
	15
<u>Second Semester</u>	<u>Credits</u>
MLT-2501 Clinical Chemistry	5
MLT-2471 Immunohematology and Serology	5
BIO-2500 Microbiology	4
IT-1010 Introduction to Microcomputer Applications ...OR	3
IT-101H Honors Introduction to Microcomputer Applications	—
	17
<u>Third Semester</u>	<u>Credits</u>
MLT-2482 Clinical Microbiology	5
MLT-2990 Advanced MLT Applications C	6
BIO-2341 Anatomy and Physiology II	4
	15
<u>Fourth Semester</u>	<u>Credits</u>
SPCH-1000 Fundamentals of Interpersonal Communication	3
MLT-2940 Medical Laboratory Field Experience C	3
MLT-2980 Professional Development and Life Skills Seminar	1
	7
PROGRAM TOTAL	70

¹Enrollment in CHEM-1020 requires students to have either achieved a sufficient score on Chemistry Placement Test or completed CHEM-1010 with "C" or higher.

²Students who do not place into MATH-1410 on assessment test must take MATH-1270 as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.

³Enrollment in BIO-2331 requires either appropriate placement score on biology Placement test or a grade of "C" or higher in BIO-1100. BIO-233A and BIO-233B may be taken in place of BIO-2331.

C = Capstone course.

LABORATORY PHLEBOTOMY

Short-Term Certificate

The Laboratory Phlebotomy Short-Term Certificate is a skills-oriented program designed to educate and train persons to skillfully collect blood specimens in a variety of situations. The curriculum includes introduction to blood collection, special blood collecting techniques, medical terminology, medical ethics, asepsis, human biology, and an eight-week period of clinical hands-on experience in a hospital or medical clinic.

The skill of phlebotomy is part of the Medical Laboratory Technology (Clinical Laboratory Science) profession. Students can apply their technical credits in phlebotomy to the Associate Degree of Applied Science in Medical Laboratory Technology.

Program Admission Requirements:

- Rolling admissions. Program starts spring (classroom based daytime lecture/labs) and fall semesters (distance learning lecture/evening labs) of each year. Refer to program website for specific/additional scheduling: <http://www.tri-c.edu/programs/healthcareers/Phlebotomy/Pages/default.aspx>. Application may be submitted to the Health Career Enrollment Center while enrolled in final prerequisite courses.
- High School Diploma/GED
- Eligibility for ENG-1010.
- Eligibility for MATH-0960.
- Complete the following:
 - MA-1020
 - BIO-1050 (also accept BIO-1221, 2341 or 234A in place of BIO-1050)
 - ESL (English as a Second Language) Students: completion of TOEFL test
- GPA required: 2.50 admissions requirements/core courses

Other Information:

- 24 students accepted per semester, contingent upon availability of clinical sites.
- All science and math courses must have been completed within seven years of application submission, and may only be repeated once to improve a grade. Applicants with bachelor's or higher degree in sciences may have seven year limit on science and math courses waived (contact program manager).
- Time limit on core courses prior to application: seven years.
- Criminal background check required (see page 73).
- English as a Second Language students will be required to take and pass the Test of English as a Foreign Language (TOEFL) with minimum scores of: Reading 21, Listening 22, Writing 23, and Speaking 24. Submit scores with Health Careers Application to the Health Careers Enrollment Center.
- Upon acceptance to the program and prior to placement at a clinical site, student must submit evidence of good health/physical exam, current immunization status, current health insurance, and current certification in CPR.
- Accepted candidates will be required to attend a program orientation after acceptance into the program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate an understanding of the basic concepts of communications, personal and patient interaction, stress management, professional behavior, and the legal implications of this work environment.
2. Perform proper infection control techniques and safety measures to protect patient, co-workers and community.
3. Apply knowledge of the anatomy and physiology of body systems and anatomic terminology in order to relate major area of the clinical laboratory to general pathologic conditions associated with the body systems.
4. Demonstrate proper techniques using appropriate equipment to perform venipuncture and capillary puncture while maintaining quality assurance during and after specimen acquisition.
5. Meet eligibility requirements to sit for American Society for Clinical Pathology (ASCP) Board of Registry Examination or equivalent.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
BIO-1050	Human Biology ¹	3
MA-1020	Medical Terminology I	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PHIL-2050	Bioethics ...OR	3
PHIL-205H	Honors Bioethics	-
		12
<u>Second Semester</u>		<u>Credits</u>
MLT-1300	Introduction to Blood Collection ²	3
MLT-1850	Medical Laboratory Practicum I ²	3
MLT-2970	Advanced Phlebotomy ³	1 7
PROGRAM TOTAL		19

¹BIO-1221, BIO-2341, and BIO-234A will be accepted in place of BIO-1050.

²Consecutive eight week course.

³Completed second eight weeks with MLT-1850.

NUCLEAR MEDICINE

Associate of Applied Science degree in Nuclear Medicine

A Nuclear Medicine technologist is the health professional responsible for performing nuclear medicine examinations that assist the physician in the diagnosis and treatment of various diseases. The trained nuclear medicine technologist prepares and administers radiopharmaceuticals and performs patient imaging procedures using radiation detection devices. Technologists provide data analysis and patient information to the physician. The nuclear medicine technologist may be employed in hospitals, clinics, imaging centers, physician's offices, education, research and manufacturing. Graduates of the program may be eligible for the American Registry of Radiologic Technologists (ARRT) examination for Nuclear Medicine and/or the Nuclear Medicine Technology Certification Board examination (NMTCB). The program is accredited by the Joint Review Committee on Educational programs in Nuclear Medicine Technology.

Program Manager: 216-987-5298

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center 216-987-4247, during the semester that all program admission requirements are expected to be met:

- High School Diploma/GED
- Complete all Program Admission Requirement courses or higher (listed in next column) with "C" or higher.
- All math and science courses must have been completed within the past seven years at the time the Nuclear Medicine application is submitted. Math and science courses completed over seven years prior to the date of application may not be used to meet admission requirements.
- 2.75 GPA must be maintained for nuclear medicine courses once admitted to the Nuclear Medicine Technology program.
- 2.50 overall GPA must be maintained while waiting for entry into the first program major course.

Other Information:

- Approximately 15-18 students admitted - varies depending on space available at clinical facilities.
- Completion of the following: CHEM-1300/130L. Students with high school or previous chemistry coursework should take a chemistry placement test to qualify for CHEM-1300; students with no chemistry coursework will need to take CHEM-1010 before enrolling in CHEM-1300.
- PHYS-1050, the program will also accept PHYS-1210 in place of PHYS-1050 for those students intending on pursuing a Bachelor's degree.
- BIO-1221 or 2331 and 2341 (A&P I and II) may be used in place of BIO-1221.
- After formal admission to the program, but prior to beginning the first semester coursework, an applicant must show evidence of completion of two 8 hour clinical observations. Details of observation requirements will be provided with the acceptance letter mailed during summer session.
- Evidence of current certification in the Basic Life Support (CPR) Course for Health Care Providers (adult, child & infant) according to the American Heart Association standards or equivalency will be required prior to receiving clinical assignment.
- Candidates will be required to present evidence of good health verified by a physical examination prior to being granted permission to enter clinical training. Please refer to

Health Requirements for Western Campus Health Career Students.

- Only one admission requirement course may be repeated only once to improve a grade below "C". A "W" is counted as an attempt.
- Completion of Test of English as a Foreign Language (TOEFL) is required of all international students or if English is spoken as a second language. A minimum iBT score of 24 is required in the speaking skill component and a minimum iBT score of 22 is required in the listening skill component a minimum iBT score of 21 in the reading component, and a minimum score of 23 in the writing component. More information about this test is at <http://www.ets.org/>.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use effective verbal, non-verbal and written communication skills to provide comprehensive patient care in a healthcare team environment.
2. Prepare, record, administer and dispose of radioactive materials according to regulatory guidelines to ensure safety of patients, co-workers and the general public.
3. Demonstrate comprehensive patient care skills to provide safe, efficient and high quality nuclear medicine services.
4. Apply general science knowledge to demonstrate the proper and safe use of equipment and instrumentation for diagnostic and therapeutic applications within the scope of nuclear medicine practice.
5. Sit for Nuclear Medicine Technology Certification Board (NMTCB) and American Registry of Radiologic Technology [nuclear] (ARRT) and apply for state licensure.

	Suggested Semester Sequence	
<u>Program</u>	<u>Admissions Requirements</u>	<u>Semester</u>
		<u>Credits</u>
BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging ¹	4
MATH-1521	College Algebra ² ... OR	4
MATH-152H	Honors College Algebra	4
CHEM-1300	General Chemistry I ... AND	4
CHEM-130L	General Chemistry Laboratory I ... OR	1
CHEM-130H	Honors General Chemistry I	5
PHYS-1050	Everyday Physics ³	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
MA-1020	Medical Terminology I	<u>3</u>
		21
	<u>First Semester</u>	<u>Credits</u>
NMED-1010	Nuclear Medicine Math and Statistics	1
NMED-1200	Radiation Safety & Biology	2
NMED-1301	Nuclear Medicine Procedures I	3
NMED-130L	Nuclear Medicine Laboratory I	1
NMED-1501	Radiation Physics	2
NMED-1602	Nuclear Radiopharmacy and Pharmacology	4
NMED-1701	Nuclear Medicine Instrumentation	<u>3</u>
		16

(continued on next page)

NUCLEAR MEDICINE (Continued)

<u>Second Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	
SPCH-1000	Fundamentals of Interpersonal Communication	
NMED-1100	Computers in Nuclear Medicine	1
NMED-1401	Patient Care for Nuclear Medicine	1
NMED-1770	Immunology and Pathophysiology for Sectional Imaging	2
NMED-1780	Sectional Anatomy for Advanced Molecular Imaging	2
NMED-2301	Nuclear Medicine Procedures II	3
NMED-230L	Nuclear Medicine Laboratory II	1
NMED-2600	Molecular and Fusion Imaging	2
NMED-2660	Nuclear Medicine Therapy	1
		16

<u>Summer Semester</u>		<u>Credits</u>
NMED-2700	Nuclear Medicine Research Methods	1
NMED-2940	Nuclear Medicine Field Experience I	3
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	-
		7

<u>Third Semester</u>		<u>Credits</u>
NMED-2950	Nuclear Medicine Field Experience II	4
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		7

<u>Fourth Semester</u>		<u>Credits</u>
NMED-2960	Nuclear Medicine Field Experience III C	4
Arts & Hum/Soc & Beh Sci	(see AAS Degree requirements)	2
		6

PROGRAM TOTAL 73

¹BIO-2331 & 2341 together will be accepted in place of BIO-1221.

²MATH-1800-1820 may not be used to meet this requirement.

³PHYS-1210 will be accepted in place of PHYS-1050.

C = Capstone course.

General Application Procedures:

Nursing (Associate of Applied Science Degree) Nursing (Accelerated Track) Nursing ACCESS in Nursing (LPN-RN Track) Practical Nurse Program (Certificate of Proficiency)

Admission each year is limited to the number of openings in each program. Those students meeting all of the specific admission requirements will be provided with an application and admitted in the order in which completed applications are received.

Those who wish to apply for any of these programs must complete the following general procedures; additional requirements for each program are listed with the program sequence.

1. Submit a completed Application for Admission or Readmission to Cuyahoga Community College. Prior Tri-C students who have not been enrolled for three years or longer must submit an Application for Admission/ Readmission to Tri-C. Online admission at www.tri-c.edu.
2. Contact the high school from which you graduated or the agency that issued your GED and have them send an official transcript(s) directly to the Office of the Registrar, P. O. Box 5966, Cleveland, OH 44101-0966.
3. Contact all colleges/universities you have attended and have them send an official transcript directly to the Office of the Registrar at Tri-C. To ensure time for processing, the official transcript(s) should be received by the Office of the Registrar at least *four weeks prior to contacting the Nursing department*. Applicants who have attended institutions outside the U.S. must contact the Enrollment Center for special procedures. It is strongly recommended that all students schedule an appointment with an academic counselor at their campus of record.
4. Complete all required courses and meet the grade point average (GPA) requirements as specified in the program admissions requirements. If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses listed on the program sequence pages are the minimum levels for eligibility.
5. In addition to academic requirements, successful completion of the Elsevier Admission Test (A2) is required in order to receive an application to the program.
6. Once all prerequisites have been completed, student may request a review online at <http://www.tri-c.edu/programs/nursing>, or via email at nursing@tri-c.edu. Potential applicants will receive written notification regarding eligibility for the program.
7. A background check (finger printing and court search) must be completed no sooner than months prior to the start of your program and no later than eight-weeks prior to the start of your program. Go to www.tri-c.edu/programs/nursing for additional information.

Any falsification of information provided in the application will automatically disqualify applicant for admission to a program.

All courses required for the Nursing programs MUST have a traditional letter grade, including the admissions requirements. The P/NP grading option will NOT be accepted by the Nursing programs.

Misdemeanors and Felonies: The Ohio Board of Nursing frequently receives calls from prospective students, school officials and the Bureau of Vocational Rehabilitation Services regarding whether the Board will permit a person who has a prior record of misdemeanors and/or felonies to sit for the licensure examination or become licensed. *The Board of Nursing has no statutory authority to advise as to whether an individual will be permitted to take the licensure examination or be able to be licensed until the individual actually applies to the Board for licensure by examination* (Ohio Board of Nursing [9/23/98]. Requirements for Section 5 of the Application for Licensure as a Nurse).

Felony Preclusion Bill: The Felony Preclusion Bill, signed by the Governor in April 2002, is an initiative to identify applicants for licensure with felony convictions. The Ohio Board of Nursing has the authority in this law to refuse to grant licensure to applicants with any of the felony convictions specified in the law. The egregious felonies listed in the bill include: aggravated murder, murder, voluntary manslaughter, felonious assault, kidnapping, rape, sexual battery, gross sexual imposition, aggravated arson, aggravated robbery, and aggravated burglary. **The law requires a criminal records check for new applicants for licensure.**

Required Criminal Background check (BCI): All students enrolled in Health Career and Nursing programs requiring off-campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Students returning to a Health Career program after one year of absence will need to complete another BCI. Students with a BCI record are not guaranteed acceptance into a clinical site, acceptance by their professional licensure/registration board, or employment in a health career field. *Due to the increased rise in patient identity theft, students with a convicted felony for forgery will not be accepted into a health career program.* Log onto www.tri-c.edu/nursing for further information. Reports from the background checks will be sent to the Dean of Nursing. Please be assured that this information will be kept confidential.

DEFINITION OF ELIGIBILITY: Eligibility for a specific course may be demonstrated by any of the following:

- a. Completion of Tri-C's placement test with a score appropriate for the specific course listed; OR
- b. Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university); OR
- c. Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

QUARTER COURSES: Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree program

NURSING

Associate of Applied Science degree in Nursing

Upon successful completion of the associate degree nursing program requirements, graduates are eligible to take the National Council Licensure Examination for Registered Nurses. The curriculum is divided among nursing courses and non-nursing courses. The nursing courses consist of classroom activities and hospital experience caring for clients of all ages with a variety of health deviations.

Department of Nursing Education: 216-987-4067

Program Admission Requirements: Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- High School Diploma/GED. High school transcript must be sent to Tri-C, Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101.
- Complete ENG-1010 or ENG-101H with "C" or higher. Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication must be earned.
- Complete MATH-1250 or higher with "C" or higher**.
- Complete the following ("C" grade or higher in each): BIO-1100 or CHEM-1010 and 1020
PSY-1010 or PSY-101H
- GPA: 2.00 admissions requirements; 2.50 overall

Other Information:

- Comprehensive admissions information can be found at <http://www.tri-c.edu/nursing>.
- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 2.50 GPA. Achieve a grade of 75% or higher in Math Skills and 75% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- Day and evening classes admitted Fall and Spring. Space available basis.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Criminal background check required (see page 198.)

Program Outcomes: The standard degree, the Accelerated Track and LPN to RN track of the program in Nursing are designed to prepare students to demonstrate the following program outcomes:

1. Apply the nursing process in managing care for groups of individuals and families in a variety of health care settings.
2. Utilize information from multiple sources for managing safe, effective and quality nursing care for groups of individuals and families in a variety of healthcare settings.
3. Utilize critical thinking to apply evidence based practice when managing care for groups of individuals and families in a variety of health care settings.
4. Apply effective communication skills to establish and maintain therapeutic and professional relationships in managing care for groups of individuals and families in a variety of health care settings.
5. Integrate principles of human development when providing nursing care for groups of individuals and families across the life span.

6. Incorporate knowledge of cultural and socioeconomic factors in the management of nursing care for groups of individuals and families in a variety of health care settings.
7. Deliver, safe, competent and quality patient centered nursing care within the role of the Associate Degree Nurse as a:
 - a. **Provider of care:** Integrate biopsychosocial and scientific principles when providing technically competent care for groups of individuals and families in a variety of health care settings.
 - b. **Manager of care:**
 - i. Collaborate as a member of the health care team to manage the care of groups of individuals and families in a variety of health care settings.
 - ii. Delegate activities to manage the care of groups of individuals and families in a variety of health care settings.
 - c. **Member of the discipline of nursing:**
 - i. Practice within the ethical and legal framework of the nursing profession.
 - ii. Formulate a plan for continuing professional development.
 - iii. Identify resources for continuing professional development.

Suggested Semester Sequence

<u>Program Admissions Requirements</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1250	Contemporary Mathematics or higher ²	4
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
		13

<u>First Semester</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ³	4
NURS-1300	Health Assessment	2
NURS-1450	Self-Care Needs: Adult Life Span	8
PSY-2020	Life Span Development OR	4
PSY-202H	Honors Life Span Development	
		18

<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II ³	4
BIO-2500	Microbiology	4
NURS-1600	Health Deviations I	8
NURS-1701	Community/Home Nursing	1
		17

<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ⁴ ... OR	3
ENG-102H	Honors College Composition II	
NURS-2300	Specialized Health Care Needs	9
		12

<u>Fourth Semester</u>		<u>Credits</u>
NURS-2400	Health Management C	1
NURS-2501	Health Deviations II	8
		9

PROGRAM TOTAL 69

¹CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.

²MATH-1800-1820 may not be used to meet this requirement.


³Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331. Modular courses BIO-234A & BIO-234B may be taken in place of BIO-2341.

(continued on next page)

Program Sequences

NURSING (Continued)

⁴Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in communication must be earned.

 Capstone course.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to <http://www.acenursing.us/accreditedprograms/programsearch.htm> and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

NURSING ACCELERATED TRACK

Associate of Applied Science degree in Nursing (Accelerated Track)

Applicants with a bachelor's degree (or higher) from an accredited institution may qualify to enter in the Accelerated Track of the program and complete the program in four consecutive terms. These applicants must meet all nursing program admission requirements including the Entrance Examination and have completed prerequisite courses (see admission requirements).

Program Admission Requirements:

- Admission requirements for the Accelerated Track must be completed by the end of the Fall Semester to be considered eligible for admission into the following Fall Semester.
- Application may be submitted after meeting requirements listed below. Comprehensive admissions information is available at the Nursing website: <http://www.tri-c.edu/programs/nursing/Pages/default.aspx>.
- Submit all official college transcripts verifying bachelor's degree to Office of the Registrar.
- Complete the program admission requirement courses (listed in next column) with "C" or higher. Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication must be earned.
- GPA required: 2.00 admissions requirements; 2.50 overall.
- Accelerated Track admitted Fall Semester, day section only, on a space available basis.
- Successful completion of entrance examination.

Other Information:

- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 2.50 GPA. Achieve a grade of 75% or higher in Math Skills and 75% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Criminal background check required (see page 198).

Suggested Semester Sequence				
<u>Program</u>	<u>Admissions</u>	<u>Requirements</u>	<u>Semester</u>	<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ...	OR		3
CHEM-1010	Introduction to Inorganic Chemistry ...	AND		4
CHEM-1020	Introduction to Organic Chemistry and Biochemistry ¹			4
BIO-2331	Anatomy and Physiology I ²			4
BIO-2341	Anatomy and Physiology II ²			4
BIO-2500	Microbiology			4
ENG-1010	College Composition I ³ ...	OR		3
ENG-101H	Honors College Composition I			
MATH-1250	Contemporary Mathematics or higher ⁴			4
PSY-1010	General Psychology ...	OR		3
PSY-101H	Honors General Psychology			
				25 - 30
<u>First Semester</u>				<u>Credits</u>
NURS-1300	Health Assessment			2
NURS-1450	Self-Care Needs: Adult Life Span			8
PSY-2020	Life Span Development ...	OR		4
PSY-202H	Honors Life Span Development			
				14
<u>Second Semester</u>				<u>Credits</u>
NURS-1600	Health Deviations I			8
NURS-1701	Community/Home Nursing			1
				9
<u>Summer Semester</u>				<u>Credits</u>
ENG-1020	College Composition II ...	OR		3
ENG-102H	Honors College Composition II			
NURS-2300	Specialized Health Care Needs			9
				12
<u>Third Semester</u>				<u>Credits</u>
NURS-2400	Health Management			1
NURS-2501	Health Deviations II			8
				9
				69

¹CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.


²BIO-233A and BIO-233B may be taken in place of BIO-2331.

²BIO-234A and BIO-234B may be taken in place of BIO-2341.

³Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in communication must be earned.

⁴MATH-1800-1820 may not be used to meet this requirement.

Transfer credits may be used to meet program admission requirements as appropriate.

 Capstone course.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to <http://www.acenursing.us/accreditedprograms/programsearch.htm> and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

A Post-Degree Professional Certificate in Legal Nurse Consultant is also available through the Paralegal Studies program (see page 208).

NURSING (ACCESS LPN TO RN TRACK)

Associate of Applied Science degree in Nursing (ACCESS LPN to RN Track)

Upon successful completion of the associate degree nursing program requirements, graduates are eligible to take the National Council Licensure Examination for Registered Nurses. The curriculum is divided among nursing courses and non-nursing courses. The nursing courses consist of classroom activities and hospital experience caring for clients of all ages with a variety of health deviations.

Note: This program admits students in the Spring Semester and it is a modified evening program

Program Admission Requirements: Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- Students who seek admission to the LPN to RN track must meet all Nursing Program admission requirements and must have the following credentials for enrollment in NURS-160A and NURSE 160D:
 1. Licensed in Ohio without restriction
 2. Graduated from an approved Practical Nursing Education Program
 3. Achieved a grade of "C" or better in each Practical Nursing Courses completed.
 4. Credentialed to administer medication by the Ohio Board of Nursing (OBN)
 5. Official LPN transcript
 6. One year - minimum of clinical nursing experiences as an L.P.N.
- Application may be submitted after meeting requirements listed below.
- Complete the program admissions courses (listed in next column) with "C" or higher.
- High School Diploma/GED. High school transcript must be sent to Tri-C, Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101.
- GPA: 2.50 overall.

Other Information:

- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 2.50 GPA. Achieve a grade of 75% or higher in Math Skills and 75% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Criminal background check required (see page 198).

Suggested Semester Sequence

Program Admissions Requirements	Semester	Credits
BIO-1100	Introduction to Biological Chemistry ¹	3
ENG-1010	College Composition I ² ... OR	3
ENG-101H	Honors College Composition I	
MATH-1250	Contemporary Mathematics or higher ³	4
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
		13

First Semester		Credits
BIO-2331	Anatomy and Physiology I ⁴	4
NURS-160A	Access to Registered Nursing ^{5,7}	3
NURS-160D	Health Deviations I for LPNs ^{6,8}	3
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	
		14

Summer Semester		Credits
BIO-2341	Anatomy and Physiology II	4
BIO-2500	Microbiology	4
		8

Second Semester		Credits
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
NURS-1701	Community/Home Nursing	1
NURS-2300	Specialized Health Care Needs	2
		13

Third Semester		Credits
NURS-2400	Health Management C	1
NURS-2501	Health Deviations II	8
		9

PROGRAM TOTAL 57

¹CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.

²Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in communication must be earned.

³MATH-1800 - 1820 may not be used to meet this requirement.

⁴Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331.

⁵NURS 160A is a bridge course that replaces NURS-1300, 1450, and 1600.

⁶LPNs accepted into the Cuyahoga Community College Nursing Program are required to take NURS-160D.

⁷After successful completion of NURS-160A & while enrolled in NURS-160D, students will be required to complete the Award of Comparable Credit: Assessment of Prior Learning form requesting By-Passed credit for NURS-1300, 1450 & 1600 (18 CR) or if eligible apply for transfer of credit for NURS-1300, 1450 & 1600 through the Career Technical Assurance Guide (CTAG) process. Awarded comparable or CTAG credit will not affect a student's GPA. Students must maintain term enrollment in order to receive credit.

⁸LPNs accepted into Cuyahoga Community College Nursing Program are required to take NURS-160D prior to progressing to NURS 2300. PSY-2020, BIO-2331, BIO-2341, & BIO-2500 must also be successfully completed with a grade of "C" or higher prior to enrolling in NURS-2300.

C = Capstone course.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to <http://www.acenursing.us/accreditedprograms/programsearch.htm> and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

PRACTICAL NURSING

Certificate of Proficiency

The Practical Nurse (under the direction of a physician, dentist, optometrist, podiatrist or registered nurse) works in a variety of settings including: clinics, home care, hospitals, long-term care facilities and physicians' offices. The curriculum consists of 41 semester credits, divided among nursing and non-nursing courses. The nursing courses consist of classroom activities, hospital and long-term care experiences caring for patients of all ages with a variety of health deviations. Upon successful completion of the program requirements, graduates are eligible to take the National Council Licensure Examination for Practical Nurses. ACCESS in Nursing is available for graduates.

Program Manager: 216-987-4067

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141
- Seven years (see Other Information below) GPA required: 2.00 overall

Other Information:

- Day and modified evening classes admitted Fall only. Space available basis. Clinical experiences may be held during the day and/or modified evenings and weekends.
- The Entrance Exam is required for admission into the Practical Nursing program. In order to take the Entrance exam, the student must possess a High School diploma or GED, overall college GPA of 2.0, and eligible to register for MATH-1141 and ENG-1010. Applicants must achieve a grade of 70% or higher in Math Skills and 70% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer credits (may be taken after admission to the program).
- BIO-2331 with grade of "C" or higher will be accepted in place of BIO-1050/105L for students admitted prior to Fall 2013. BIO-2331 and BIO-2341 together will be accepted in place of BIO-1050 and BIO-105L effective Fall 2011 (may be taken after admission to the program).
- Once Practical Nursing courses have begun, all other classes must be taken in program sequence.
- A grade of "C" or higher required for ENG-1010, MATH-1141, BIO-1100, BIO-1050/105L, PSY-1010 and PSY-2020.
- ACCESS in Nursing available for graduates of this certificate program.
- Criminal background check required (see page 198).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Collects, prioritizes, organizes and records patient information in an accurate and appropriate manner for continuity of patient care.
2. Integrate interpersonal skill concepts and professional behavior standards into the practice of Practical Nursing. The ability to utilize therapeutic communication skills effectively with members of the health care team, patients and families.
3. Apply the principles of medication administration, utilizing the nursing process to affect a positive and safe outcome. Also, utilize the nursing process while implementing

scientific principles of nursing, consistently, to safely provide technical care.

4. Delegate and supervise within LPN scope of practice, unlicensed personnel in the performance of appropriate skills while adhering to facility policies and procedures.
5. Demonstrate a theory based practice when planning, implementing and evaluating the nursing care of individuals and groups across the lifespan, including end of life care.
6. Utilize critical thinking in a clinical environment, applying the nursing process to meet self-care and self care deficits across the life span. Including end-of-life care.

A practical nurse should be able to use critical thinking skills to:

- Assist RN with patient assessment
 - Prioritize patient care among patients
 - Recognize when a patient is in trouble and seek assistance
 - Delegate tasks within scope of practice
7. Effectively teach patients and families self-care to attain, maintain optimal level of wellness or to a dignified death in accordance with patient's wishes.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra & Math Reasoning or higher	3
PNUR-1300	Introduction to Patient Care ²	2
PNUR-1321	Nursing Management of Adults I	7
		19
<u>Second Semester</u>		
BIO-1100	Introduction to Biological Chemistry ³	3
PNUR-1330	Nursing Management of Adults II	8
PSY-1010	General Psychology ...OR	3
PSY-101H	Honors General Psychology	-
		14
<u>Third Semester</u>		
PNUR-1341	Lifespan Nursing for the Practical Nurse	4
PSY-2020	Life Span Development ...OR	4
PSY-202H	Honors Life Span Development	-
		8
	PROGRAM TOTAL	41

¹BIO-2331 and BIO-2341 together will be accepted in place of BIO-1050 and BIO-105L. BIO-2330 will be accepted for students admitted through Fall 2012. Students admitted starting Fall 2013 must take BIO-1050 and 105L or BIO-2331 and BIO-2341.

²STNA Certified students may be granted credit for this course upon successful completion of written and skills competency exams.

³CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY

Associate of Applied Science degree in Occupational Therapy Assistant Technology

Occupational therapy practitioners help people of all ages gain skills needed to take part in meaningful daily activities called occupations, to support participation in their environments, from dressing and feeding themselves, to work, school, play, leisure, and/or social participation.

This program is designed to prepare students to provide occupational therapy treatments and related tasks under the supervision of a Registered Occupational Therapist in a variety of delivery systems, including, but not limited to: acute care settings, long term care facilities, rehabilitation centers, school systems, mental health agencies and institutions, home health care agencies, pediatric centers, and private practices. They may also be employed as activity coordinators.

The program requires five full-time semesters of study. All OTA students must complete Level II Fieldwork within 18 months following completion of academic preparation. All academic and fieldwork requirements must be completed before the student will be eligible to sit for the National Certification Examination.

The graduates of this program receive an Associate of Applied Science degree in Occupational Therapy Assistant 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, Inc. (NBCOT). Successful completion of this exam is required to apply for licensure by the Ohio Occupational Therapy, Physical Therapy and Athletic Trainers Board.

The OTAT program is fully accredited by The Accreditation Council for Occupational Therapy Education (ACOTE), c/o Accreditation Department, American Occupational Therapy Association (AOTA) located at 4720 Montgomery Lane, Suite 200, Bethesda, MD, 20814-3449. Telephone 301-652-2682. (Website: www.acoteonline.com)

The conviction of a felony may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

NBCOT offers an Early Determination Review to individuals who have been charged with or convicted of a felony. Further information regarding this issue can be obtained from NBCOT at 800 South Frederick Ave., Suite 200, Gaithersburg, MD 20877-4150. The phone number is 301-990-7979. (Website: www.nbcot.org)

Program Manager: 216-987-4498

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete the following:
 - BIO-2331 (or BIO-2330 or 233A & BIO-234A)
 - MA-1020 Medical Terminology
 - Sufficient score on Biology placement test or grade of "C" or higher in BIO-1100.
- GPA required: 3.0 admissions requirements, 2.50 overall
- 50 hours of documented volunteer experience under supervision of an occupational therapist or occupational therapist assistant. Prospective applicants have the option of

taking the OTAT-1300 Occupational Therapy Principles (introductory course) in lieu of volunteer experience.

Other Information:

- 30 students accepted per year.
- All science courses must have been completed within ten years of application submission, and may only be repeated once to improve a grade.
- English and science courses may be repeated only one time to earn a grade of "C".
- Pass/No Pass grade options may not be used for prerequisite requirements.
- Paid work experience as a Rehab Aide/OT Aide will be considered in lieu of volunteer experience.
- Non-native English speaking applicants: Required TOEFL Scores: Reading - 21 Listening - 21, Writing - 23, and Speaking 25. (<http://www.toefl.org>). Arrangements and costs incurred for the TOEFL will be the responsibility of the student.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use knowledge of anatomy/physiology, human development and mental/physical conditions to the application of occupational therapy principles and safely administer effective treatment intervention to achieve expected outcomes as related to occupation.
2. Understand the distinct roles and responsibilities of the occupational therapist and occupational therapy assistant in the supervisory process.
3. Employ state licensure laws and regulations in all situations that include clinical & professional decision making.
4. Listen, speak, and contribute using interpersonal skills with clinical team members, clients, family and other relevant support persons within context of occupational therapy settings.
5. Use professional and appropriate medical terminology in all verbal, written, and electronic communication that is relevant to practitioners, family and clients in occupational therapy settings and follows guidelines and specific documentation formats required by state practice acts, practice settings, and other regulatory agencies.
6. Apply effective principles of time management, clinical reasoning, problem solving, safety awareness, and cultural sensitivity to clients and situations in occupational therapy settings.
7. Act professionally and ethically by upholding the ethical standards, values and attitudes of the occupational therapy profession.
8. Achieve entry-level competence by successfully completing academic and fieldwork education requirements and passing the certification examination.

(continued on next page)

Program Sequences

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY (Continued)

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ¹	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
OTAT-1300	Occupational Therapy Principles	2
OTAT-1310	Task Analysis	<u>2</u>
		14

<u>First Semester</u>		<u>Credits</u>
MATH-1xxx	1000-level MATH course or higher	3
OTAT-1320	Fundamentals of Developmental Disabilities	2
OTAT-1330	Techniques in Developmental Disabilities	3
OTAT-1850	Practicum I	2
PTAT-1300	Functional Anatomy	4
PSY-1010	General Psychology ² ...OR	3
PSY-101H	Honors General Psychology	-
		17

<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
OTAT-1420	Fundamentals of Psychosocial Dysfunction	2
OTAT-1430	Techniques in Psychosocial Dysfunction	3
OTAT-1860	Practicum II	2
OTAT-1980	Therapeutic Use of Self	2
PSY-2020	Life Span Development ...OR	4
PSY-202H	Honors Life Span Development	-
		17

<u>Third Semester</u>		<u>Credits</u>
OTAT-2320	Fundamentals of Physical Dysfunction	4
OTAT-2330	Techniques in Physical Disabilities	4
OTAT-2340	Occupational Therapy Issues C	3
OTAT-2860	Practicum III	2
PHIL-1000	Critical Thinking	<u>3</u>
		16

<u>Fourth Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ...OR	3
ENG-102H	Honors College Composition II	
OTAT-2940	Field Experience	<u>3</u>
		6
	PROGRAM TOTAL	70

¹BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

C = Capstone course.

OPTICAL TECHNOLOGY

Associate of Applied Science degree in Optical Technology

Dispensing opticians are those professionals who fit eyeglasses or contact lenses as prescribed by an Ophthalmologist or Optometrist. These professionals analyze prescriptions along with the patient's occupation and habits in order to make recommendations about lenses and spectacle frames. Licensed opticians may work in retail, laboratory, or private practice settings.

Program Manager: 216-987-4454

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010 with "C" or higher
- Eligibility for MATH-1060 or higher with "C" or higher
- GPA required: 2.00 overall

Other Information:

- 14 students accepted per year
- Criminal background check required (see page 73).
- Certificate available
- Acceptance into a Tri-C Healthcare program with a BCI record does not guarantee a clinical site place, acceptance by the profession's licensure/registration board, or employment upon graduation.
- A student placed in ESL courses through the college's ESL Assessment procedure (at the college Assessment Center) will be required to take and pass the Test of English as a Foreign Language (TOEFL) with a minimum score in Reading 21, Listening 21, Writing 23 and Speaking 25.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally and in writing to clients, colleagues, and other professionals.
2. Design eyewear by combining accurate physiognomic measurements with knowledge of ocular anatomy, geometric optics and prescription analysis.
3. Demonstrate proficiency in the operation and function of equipment and tools used in the fabrication and verification of eyewear.
4. Perform all tasks associated with the fitting and dispensing of eyewear.
5. Apply knowledge of ocular physiology and of local, state and federal guidelines in order to maintain accurate medical records.
6. Work within the safety standards that govern opticianry.
7. Discuss Ohio and national statutes that govern opticianry.
8. Conduct him/herself in a professional manner at all times.
9. Sit for the National Opticianry Certification Examination and the Contact Lens Registry Examination.

(continued on next page)

OPTICAL TECHNOLOGY (Continued)

Suggested Semester Sequence		
<u>First Semester</u>		
BIO-1230	Anatomy and Physiology of the Eye	4
MATH-1060	Survey of Mathematics or higher	3
OPT-1310	Theoretical Optics I	2
OPT-1410	Mechanical Optics I	2
OPT-1510	Optical Dispensing I	3
OPT-1610	Contact Lens I	2
		16
<u>Second Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
OPT-1320	Theoretical Optics II	2
OPT-1420	Mechanical Optics II	2
OPT-1520	Optical Dispensing II	3
OPT-1620	Contact Lens II	3
PHYS-1300	Physics of Optical Materials	4
		17
<u>Summer Semester</u>		
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
OPT-2500	Optical Business ... OR	2-4
BADM-1300	Small Business Management	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		8 - 10
<u>Third Semester</u>		
OPT-1710	Introduction to Patient Care	3
OPT-2650	License Review Spectacle	1
OPT-2670	Optical Development	2
OPT-2940	Optical Field Experience I	2
OPT-2971	Optical Field Experience Seminar I	3
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	-
		14
<u>Fourth Semester</u>		
OPT-2660	License Review Contact Lens	1
OPT-2701	Refractometry	3
OPT-2750	Ophthalmic Third Party Insurance	1
OPT-2950	Optical Field Experience II	2
OPT-2981	Optical Field Experience Seminar II C	3
EMT-1310	Cardiopulmonary Resuscitation	1
Communication...(See AAS Degree requirements) ²		3
		14
	PROGRAM TOTAL	69 - 71

²Highly recommend ENG-1020 College Composition II or ENG-2151 Technical Writing.

C = Capstone course.

OPTICAL TECHNOLOGY

Certificate of Proficiency

A student who receives a one-year certificate can work in a retail outlet, optical laboratory or a doctor's office. Other career paths can lead to related work as a sales representative for optical products. Note: In order to be eligible to take the State Board Exam for licensure, you must finish the Optical Technology degree program.

Degree: Students may apply credits toward the Optical Technology degree program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.
2. Fabricate spectacle lenses in a finishing laboratory environment with the ability to perform the basic tasks associated with fitting and dispensing eyewear under the supervision of a licensed optician.
3. Analyze and interpret prescriptions in order to make appropriate eyewear recommendations.
4. Work within the safety standards that govern opticianry.
5. Conduct him/herself in a professional manner at all times.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
OPT-1310	Theoretical Optics I	2
OPT-1410	Mechanical Optics I	2
OPT-1510	Optical Dispensing I	3
OPT-1610	Contact Lens I	2
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		15
<u>Second Semester</u>		<u>Credits</u>
MATH-1060	Survey of Mathematics or higher	3
OPT-1320	Theoretical Optics II	2
OPT-1420	Mechanical Optics II	2
OPT-1520	Optical Dispensing II	3
OPT-1620	Contact Lens II	3
		13
<u>Summer Session</u>		<u>Credits</u>
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
OPT-2500	Optical Business ¹	2
PHYS-1300	Physics of Optical Materials	4
		9
	PROGRAM TOTAL	37

¹BADM-1300 will be accepted in place of OPT-2500.

OPHTHALMIC MEDICAL ASSISTING

Short-Term Certificate

Ophthalmic Assistants are ophthalmic allied health professionals who perform procedures under the supervision of an Ophthalmologist. An Ophthalmic Assistant may be responsible for taking patient histories, providing patient services, administering diagnostic tests and maintenance of ophthalmic equipment. The Ophthalmic Medical Assisting program combines academic instruction and clinical experience under professional supervision.

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010.
- GPA required: 2.00

Other Information:

- 14 students accepted per year
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.
2. Apply knowledge of office procedures within an ophthalmic practice.
3. Identify the structure, function, and pathology of the human eye in order to maintain accurate electronic patient records in accordance with local, state, and federal guidelines.
4. Conduct pre-assessment screenings and ocular preparations using appropriate equipment and tools.
5. Work within safety standards that govern ophthalmology.
6. Conduct him/herself in a professional manner at all times.
7. Sit for certification examination for Ophthalmic Assistants.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
EMT-1310	Cardiopulmonary Resuscitation	1
BIO-1230	Anatomy and Physiology of the Eye	4
OPT-1710	Introduction to Patient Care	3
		8
<u>Second Semester</u>		<u>Credits</u>
OPT-1720	Advanced Patient Care	3
OPT-1911	Ophthalmic Assisting Directed Practice	4
		6
	PROGRAM TOTAL	14

PARALEGAL STUDIES

Associate of Applied Business degree in Paralegal Studies

The program educates students to serve as paralegal professionals and work independently in the legal field under the supervision of attorneys. Students receive a general legal education with course work in law office technology, law office administration, and computer-assisted legal research. Graduates are prepared for careers in business, industry or in non-profit corporations that interface with the legal system. Typical employers include law firms, insurance companies, local, state and federal government, title companies, banks and corporations. Paralegals organize and manage work flow in law office settings, draft legal documents, research and draft legal memoranda, and prepare attorney billings. They conduct background checks, interview clients and pursue factual investigations for employers. Paralegals may prepare witnesses for depositions and for trial. They organize client files and generally maintain client relationships. Paralegals may serve as employer liaisons to business, the police, other attorneys, government officials and the courts. Paralegals cannot accept a case, set fees, give legal advice or represent a client in court. This is an American Bar Association approved program.

Program Manager: 216-987-5214

Program Admission Requirements: Contact Paralegal Studies Program manager for required program application form:

- High School Diploma/GED
- ENG-1010 or ENG-101H
- Complete the following:
 - PL-1000 with "B" or higher.
 - Personal narrative.
 - Assessment of college-level writing skills.
 - Assessment of critical thinking skills.
- GPA required: 2.75 in Paralegal courses, 2.50 overall.

Other Information:

- Submit all college/ university transcripts to Office of the Registrar.

Program Outcomes: The Associate of Applied Science degree and the Post-Degree Professional Certificate programs are designed to prepare students to demonstrate the following program outcomes:

1. Communicate appropriately and professionally verbally and in writing to diverse audiences while maintaining confidentiality.
2. Work as an effective member of the legal team in a variety of roles.
3. Act in accordance with the rules of professional conduct and paralegal ethical codes and company policies.
4. Organize, prioritize, schedule and track assignments and appointments to meet deadlines and ensure accurate billing.
5. Investigate, prepare, conduct and summarize party, witness and expert interviews to aid in case development.
6. Analyze fact patterns; identify issues; find, apply and properly cite law using a variety of resources.
7. Draft, format and proof accurate legal documents using current technology in accordance with applicable court rules.
8. Organize, categorize and maintain case information in preparation for litigation.

(continued on next page)

PARALEGAL STUDIES (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ACCT-1020	Applied Accounting	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ¹ ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1060	Survey of Mathematics or higher	3
PL-1000	Introduction to Paralegal Profession	2
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	—
		17
<u>Second Semester</u>		
ENG-1020	College Composition II ...OR	3
ENG-102H	Honors College Composition II	
PL-1300	Civil Procedure	3
PL-1400	Basic Legal Research and Writing	3
PL-1501	Law Office Technology	2
ACCT-1310	Financial Accounting ... OR	3-4
EHST-1310	Introduction to Environmental Law ... OR	
MA-1020	Medical Terminology I	—
		14 - 15
<u>Third Semester</u>		
PL-2301	Torts and Evidence	4
PL-2440	Business Transactions	3
PL-xxxx	Any PL elective course	3
PHIL-1020	Introduction to Logic	3
POL-2100	Constitutional Law ... OR	3
POL-1020	State and Local Government	—
		16
<u>Fourth Semester</u>		
PL-2420	Probate Law	3
PL-2460	Business Organizations	3
PL-2851	Paralegal Practicum ²	1
PL-2990	Paralegal Capstone C	2
PL-2xxx	Any 2000-level PL elective course	3
PL-2400	Computer-Assisted Legal Research	3
		15
	PROGRAM TOTAL	62 - 63

¹Credit-by-exam is available through the IT department to meet this requirement. Written departmental approval from the IT department required.

²Can be waived with documentation of equivalent experience. Minimum of 60 credits for the degree still required.

C = Capstone course.

PARALEGAL STUDIES

Post-Degree Professional Certificate

This certificate program is designed for students who already have an Associate or Bachelor's Degree. The program educates students to serve as paralegal professionals and work independently in the legal field under the supervision of attorneys. Students receive a general legal education with course work in law office technology, law office administration and computer-assisted legal research. Graduates are prepared for careers in business, industry or in non-profit corporations that interface with the legal system. Typical employers include law firms, insurance companies, local, state and federal government, title companies, banks and corporations. Paralegals organize and manage work flow in law office settings, draft legal documents, research and draft legal memoranda, and prepare attorney billings. They conduct background checks, interview clients and pursue factual investigations for employers. Paralegals may prepare witnesses for depositions and for trial. They organize client files and generally maintain client relationships. Paralegals may serve as employer liaisons to business, the police, other attorneys, government officials and the courts. Paralegals cannot accept a case, set fees, give legal advice, or represent a client in court. This is an American Bar Association approved program.

Program Manager: 216-987-5214

Program Admission Requirements:

- Application required – contact Paralegal Studies Program Manager.
- High School Diploma/GED required.
- Submit college transcripts to verify Associate or Bachelor's Degree.
- Complete the following:
 - PL-1000 with "B" or higher.
 - Personal narrative.
 - Assessment of college-level writing skills.
 - Assessment of thinking/reading skills.
 - Assessment of computer skills.
- GPA required: 2.75 in Paralegal courses, 2.50 overall

Other Information:

- Fall, Spring and Summer admission

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
PL-1000	Introduction to Paralegal Profession	2
PL-1300	Civil Procedure	3
PL-1400	Basic Legal Research and Writing	3
PL-2440	Business Transactions	3
PL-xxxx	Any PL elective course	2-3
		13 - 14
<u>Second Semester</u>		
PL-2301	Torts and Evidence	4
PL-2400	Computer Assisted Legal Research	3
PL-2420	Probate LawOR	3
PL-xxxx	Any PL elective course	3
PL-2460	Business Organizations	3
PL-2851	Paralegal Practicum ¹	1
PL-2990	Paralegal Capstone	2
		16
	PROGRAM TOTAL	29 - 30

¹May be waived with documentation of comparable or equivalent experience.

LEGAL NURSE CONSULTANT

Post-Degree Professional Certificate

This program is designed for registered nurses at the associate, bachelor, or graduate degree level who wish to pursue careers in legal nurse consulting. The program educates students to serve as legal nurse consulting professionals and work in industries that require employees with specialized medical and legal knowledge. Students receive a general legal education with coursework in advanced medicolegal research, medical records review and analysis, and marketing and management for the legal nurse consultant. Graduates are prepared for careers in industries that interface with both medical and legal systems. Typical employers include personal injury law firms, insurance companies, local, state, and federal government, hospitals, consulting firms, and corporations. Many nurse consultants are self-employed and contract with law firms or other entities to apply medical/legal analysis to specific factual situations. Legal Nurse Consultants cannot accept legal cases, set legal fees, give legal advice, or represent a client in court. This is an American Bar Association approved program.

Program Manager: 216-987-5214

Program Admission Requirements:

- Application required – contact Paralegal Studies Program Manager.
- Submit all college transcripts verifying associate or bachelor's degree.
- Assessment of computer skills.
- Current R.N. license; equivalent of two years clinical work experience.
- Assessment of reading, thinking, and writing skills.
- GPA required: 2.75 in Paralegal courses; 2.50 overall.

Other Information:

- Fall, Spring and Summer admission

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate appropriately and professionally verbally and in writing to diverse audiences while maintaining confidentiality.
2. Work as an effective member of the legal team in a variety of roles.
3. Act in accordance with the rules of professional conduct and paralegal ethical codes and company policies.
4. Organize, prioritize, schedule and track assignments and appointments to meet deadlines and ensure accurate billing.
5. Investigate, prepare, conduct and summarize party, witness and expert interviews to aid in case development.
6. Analyze fact patterns; identify issues; find, apply and properly cite law using a variety of resources.
7. Draft, format and proof accurate legal documents using current technology in accordance with applicable court rules.
8. Organize, categorize and maintain case information in preparation for litigation.
9. Analyze and interpret medical information/records to identify breach in medical standard of care.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
IT-1010	Introduction to Microcomputer Applications ¹	3
PL-1300	Civil Procedure ²	3
PL-2030	Legal Nurse Consulting	<u>2</u>
		8
<u>Second Semester</u>		<u>Credits</u>
PL-2330	Advanced Medicolegal Research	3
PL-1400	Basic Legal Research and Writing	<u>3</u>
		6
<u>Summer Semester</u>		<u>Credits</u>
PL-xxxx	Any PL elective course	<u>3</u>
		3
<u>Third Semester</u>		<u>Credits</u>
PL-2430	Medical Record Review and Analysis	4
PL-2301	Torts and Evidence	<u>4</u>
		8
PROGRAM TOTAL		25

¹Credit-by-exam is available through the IT department to meet this requirement.

²For students admitted into the Legal Nurse Consulting Program, PL-1000 is not required.

PHARMACY TECHNOLOGY

Associate of Applied Science degree in Pharmacy Technology

A pharmacy technician assists the pharmacist with the day-to-day activities in the pharmacy. Under the direction of a pharmacist, the pharmacy technician performs pharmacy-related functions with the goal of optimizing patients' pharmaceutical care and department operations. Pharmacy technician duties include, but need not be limited to: maintaining patient records; setting up packaging and labeling of medication dosages; filling and dispensing routine orders for stock supplies and patient care areas; maintaining inventory of drug supplies and preparing parenteral admixtures. Other duties may include dispensing, pricing, inventory control, typing, records maintenance, cash register work and operation of computer terminals and pharmacy automation devices. The program is designed to train the pharmacy technician to function in the pharmacy departments of hospitals or other institutions, clinics, retail stores, and managed care organizations. Graduates will be prepared to take the national Pharmacy Technician Certification Examination, recognized by many employers, and will hold a college degree that will contribute to professional advancement.

Program Manager: 216-987-2381

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Eligibility for MATH-1141 (or completion of MATH-0960 or MATH-0980 with a "C" or higher).
- Complete BIO-1100 with "C" or higher. May substitute CHEM-1010 and CHEM-1020.
- GPA required: 2.00 admissions requirements; 2.00 overall.

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PHARMACY TECHNOLOGY (Continued)

Other Information:

- Science and math courses must have been completed within the past seven years at the time of admission to the program and may be repeated only once to improve a grade.
- Interview with program manager encouraged.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Assist the pharmacist in the preparation, dispensing, and consulting activities of pharmacy practice.
2. Apply principles of quality to daily pharmacy practice as it relates to effectiveness, accuracy, and compliance with established legal, professional and organizational standards while striving for continued personal development.
3. Use negotiation, verbal and written communication to meet the needs of diverse clients and function effectively as a member of the health care team.
4. Apply the principles of ethical and caring behavior in health care to all pharmacy practice settings while balancing obligations to one's self, relationships and work.
5. Recognize and explain the value of membership in professional organizations, certification, and on-going education as a basis for maintaining a strong work ethic and fostering a positive image for the practice of pharmacy.
6. Sit for Pharmacy Technician Certification exam.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
BIO-1100	Introduction to Biological Chemistry ¹	<u>3</u>
		6
<u>First Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ²	3
BIO-105L	Human Biology Laboratory ²	1
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
PHM-1300	Introduction to Pharmacy Practice	3
PHM-1350	Pharmacy Practice I	3
PHM-1450	Pharmacology and Therapeutic Principles I	<u>3</u>
		16
<u>Second Semester</u>		<u>Credits</u>
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PHM-1360	Pharmacy Practice II	3
PHM-1460	Pharmacology and Therapeutic Principles II	3
PHM-1860	Pharmacy Technology Practicum I	3
Communication...	(See AAS Degree requirements)	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
MA-1020	Medical Terminology I	3
PHM-2860	Pharmacy Technology Practicum II	3
PHM-2701	Current Topics in Pharmacy Practice C	<u>4</u>
		14

<u>Fourth Semester</u>		<u>Credits</u>
HLTH-1100	Personal Health Education	3
PHIL-2050	Bioethics ...OR	3
PHIL-205H	Honors Bioethics	
PHM-2870	Pharmacy Technology Practicum III	3
PHM-2080	Pharmacy Technician Examination Review	<u>1</u>
		10

PROGRAM TOTAL 61

¹CHEM-1010 & CHEM-1020 together will be accepted in place of BIO-1100.

²BIO-2331 will be accepted in place of BIO-1050/105L.

C = Capstone course.

PHARMACY TECHNICIAN

Certificate of Proficiency

A pharmacy technician assists the pharmacist with the day-to-day activities and processes in the pharmacy. Under the direction of a pharmacist, the pharmacy technician performs pharmacy-related functions with the goal of optimizing patients' pharmaceutical care and department operations. Pharmacy technician duties include, but need not be limited to: maintaining patient records; setting up packaging and labeling of medication dosages; filling and dispensing routine orders for stock supplies and patient care areas; maintaining inventory of drug supplies and preparing parenteral admixtures. Other duties may include dispensing, pricing, inventory control, typing, records maintenance, cash register work and operation of computer terminals and pharmacy automation devices. The program is designed to train the pharmacy technician to function in the pharmacy departments of hospitals or other institutions, clinics, retail stores, and managed care organizations. The Pharmacy Technician program is fully accredited by the American Society of Health-System Pharmacists. Graduates will be prepared to take the national Pharmacy Technician Certification Examination, recognized by many employers. Degree: Students may apply credits toward the Pharmacy Technology degree program.

Program Manager: 216-987-2381

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher or have earned credit in a higher level English course (minimum grade of C).
- Eligibility* for 1141 (or completion of MATH-0960 or MATH-0980 with a "C" or higher.)
- Complete BIO-1100 with "C" or higher. May substitute CHEM-1010 and CHEM-1020 or CHEM-101H and CHEM-102H.
- GPA required: 2.00 admission requirements; 2.00 overall.

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PHARMACY TECHNICIAN (Continued)

Other Information:

- Science and math courses must have been completed within the past seven years at the time of admission to the program and may be repeated only once to improve a grade.
- Interview with program manager encouraged.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Assist the pharmacist in the preparation, dispensing, and consulting activities of pharmacy practice.
2. Apply principles of quality to daily pharmacy practice as it relates to effectiveness, accuracy, and compliance with established legal, professional and organizational standards while striving for continued personal development.
3. Use negotiation, verbal and written communication to meet the needs of diverse clients and function effectively as a member of the health care team.
4. Apply the principles of ethical and caring behavior in health care to all pharmacy practice settings while balancing obligations to one's self, relationships and work.
5. Recognize and explain the value of membership in professional organizations, certification, and on-going education as a basis for maintaining a strong work ethic and fostering a positive image for the practice of pharmacy.
6. Sit for Pharmacy Technician Certification exam.

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	–
		6
<u>First Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ²	3
BIO-105L	Human Biology Laboratory ²	1
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
PHM-1300	Introduction to Pharmacy Practice	3
PHM-1350	Pharmacy Practice I	3
PHM-1450	Pharmacology and Therapeutic Principles I	3
		16
<u>Second Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
PHM-1360	Pharmacy Practice II	3
PHM-1460	Pharmacology and Therapeutic Principles II	3
PHM-1860	Pharmacy Technology Practicum I	3
PHM-2080	Pharmacy Technician Examination Review	1
		14
	PROGRAM TOTAL	36

¹CHEM-1010 & CHEM-1020 together will be accepted in place of BIO-1100.

²BIO-2331 or BIO-2330 will be accepted in place of BIO-1050/105L.

PHYSICAL THERAPIST ASSISTING TECHNOLOGY

Associate of Applied Science degree in Physical Therapist Assisting Technology

Physical therapy provides services to patients and clients of all ages who have impairments, functional limitations, disabilities or changes in physical function and health status resulting from injury, disease, or other causes. The physical therapist assistant works under the supervision of the licensed physical therapist to provide treatments in a variety of health care settings such as hospitals, extended care centers, school systems, ambulatory care centers, private practice and other centers where physical therapists are employed. Upon successful completion of the program, the student is eligible to take an exam to qualify for licensure in the state in which the graduate chooses to practice.

Program Manager: 216-987-4502

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Eligibility for MATH-1280 or higher. MATH-1800/1820 and 2800/2820 will not meet this requirement.
- Complete the following with "C" grade or higher: BIO-2331, HTEC-1000, MA-1020

Other Information:

- 30 students accepted per year
- All science courses must have been completed within the past 10 years.
- Candidates must achieve a minimum of a 3.0 cumulative grade point average (GPA) based on a 4.0 scale for the following core courses (or transfer of comparable courses from another college or university). All admissions requirement courses must have a grade of "C" or better and eligibility for Math 1280, Advanced Intermediate Algebra (or higher level). Admissions requirement courses are ENG 1010, BIO 2331, HTEC-1000, and MA 1020. Program admissions courses can only be repeated once to improve a grade.
- An overall GPA of 2.7 must be achieved and be maintained. Only accredited college and university credits as listed <http://www.tri-c.edu/welcome/transfer/Pages/TransferCredits.aspx> will be accepted. Overall GPA is calculated based on all previous college coursework completed through the semester prior to the date of application.
- Completion of 40 hours of work or volunteering in a Physical Therapy Department under the supervision of a Physical Therapist or Physical Therapist Assistant. Volunteer hours must be documented.
- Eligibility for BIO-2331 (appropriate test score on Biology Placement Test or completion of BIO-1100 with "C" or higher).
- Criminal background check required (see page 73).

PHYSICAL THERAPIST ASSISTING TECHNOLOGY (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Safely administer effective treatment interventions as defined by the Physical Therapist’s plan of care, adjusting to the patient’s physical, emotional, and cultural responses; instructs and educates the patient, family and/or caregivers in continued care and injury prevention.
2. Recognize and educate others regarding the role and scope of practice of the Physical Therapist Assistant in the implementation of the plan of care as established by the supervising Physical Therapist and communicate patient’s status to the physical therapist.
3. Obtain pertinent data; recognize changes and/or responses of patient conditions and environmental hazards that jeopardize safety; modify intervention within the plan of care and takes appropriate action.
4. Act professionally and ethically according to the APTA Code of Ethics and Standard of Conduct including social responsibility, commitment to patients and consumer needs, lifelong learning, and the physical therapy profession.
5. Identify and document operational performance improvements and provide accurate and timely information for billing and reimbursement purposes.
6. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.
7. Complete thorough, accurate, logical, concise, timely and legible manual and electronic documentation that follows guidelines and specific documentation formats required by state practice acts, the practice setting, and other regulatory agencies.
8. Sit for licensure examination.

Suggested Semester Sequence

<u>Summer Semester</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HTEC-1000	Introduction to Patient Care	1
MA-1020	Medical Terminology I	3
MATH-1280	Advanced Intermediate Algebra or higher ¹	5
		16

<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
PHYS-1210	College Physics I	4
PTAT-1100	Introduction to Physical Therapist Assisting	2
PTAT-1300	Functional Anatomy	4
PTAT-1311	Fundamentals of Physical Therapy	2
PTAT-1320	Introduction to Therapeutic Exercise	2
		18

<u>Second Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	3

SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
PTAT-1401	Clinical Pathophysiology	2
PTAT-1411	Physical Therapy Procedures	3
PTAT-1420	Therapeutic Exercise	3
PTAT-2940	Field Experience I	1
PTAT-2341	Psychosocial Issues in Physical Therapy	2
		17

<u>Third Semester</u>		<u>Credits</u>
HTEC-1120	Critical Thinking in Healthcare	1
HTEC-1610	Introduction to Pharmacology	2
PSY-2010	Child Growth and Development ... OR	3
PSY-201H	Honors Child Growth and Development... OR	
PSY-2020	Life Span Development ... OR	
PSY-202H	Honors Life Span Development	
PTAT-2301	Long Term Physical Therapy Rehabilitation Procedures	4
PTAT-2310	Pediatric Physical Therapy	2
PTAT-2200	Physical Therapy in Acute Care Setting	2
PTAT-2330	Geriatric Physical Therapy	2
		16 - 17

<u>Fourth Semester</u>		<u>Credits</u>
PTAT-2840	Clinical Practicum I C ²	2
PTAT-2850	Clinical Practicum II C ²	2
PTAT-2970	Practicum Seminar	1
		5
PROGRAM TOTAL		72 - 73

¹MATH-1800-1819/2800-2819 & 1820/2820 may not be used to meet this requirement.

²Consecutive eight week courses.

C = Capstone course.

PHYSICIAN ASSISTANT

Post-Degree Professional Certificate

The physician assistant works with the supervision of a licensed doctor of medicine or osteopathy and carries out many of the tasks previously performed only by physicians. These tasks include performing physical examinations, requesting and carrying out various laboratory and diagnostic tests, performing certain therapeutic procedures and providing patient education/counseling. The physician assistant, as part of the physician's team, will be able to provide patient care services in any health care setting, hospital, nursing home, office or clinic in which the physician functions professionally.

This certificate program is a dual admission program with Cleveland State University (CSU) which requires that students have completed a bachelor's degree program prior to program entry. Eligible students will be required to also apply for admission to the Masters of Science in Health Sciences program at CSU. The program will require that students be enrolled and take coursework simultaneously in the MSHS program at CSU. To be admitted to the program, the students must have taken courses in the following areas as part of the bachelor's program: General Chemistry +Lab, Organic Chemistry + lab, Microbiology (one semester), Anatomy and Physiology I, Anatomy and Physiology II, Elementary Probability/Statistics I, General Psychology (one semester) English Composition (one semester). Students who have not completed coursework in these areas as part of their bachelor's program, may complete these courses at Tri-C prior to applying for admission to the program.

Program Manager: 216-987-5423

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Application is available online through the Central Application Service for Physician Assistants (CASPA): <https://portal.caspaonline.org>
- Applicants must possess a bachelor's degree prior to program entry. Submit all college transcripts verifying a bachelor's degree.
- Completion of all prerequisite coursework with a grade of "B" or better.
- Patient care work or volunteer experience is preferred, but not required.
- Complete ENG-1010 or ENG-101H (or equivalent transfer course)
- Complete MATH-1410 Elementary Probability and Statistics I (or equivalent transfer course)
- Complete the following:
 - BIO-1500 (or equivalent transfer course with lab)
 - BIO-1510 (or equivalent transfer course with lab)
 - BIO-2331 (or 2330) and (or equivalent transfer course with lab)
 - BIO-2341 (or 2340) (or equivalent transfer course with lab)
 - BIO-2500 (or equivalent transfer course with lab)
 - CHEM-1300 & 130L (or equivalent transfer course with lab)
 - CHEM-1310 & 131L (or equivalent transfer course with lab)
 - CHEM-2300 or CHEM-1020 (or equivalent transfer course with lab)
 - PSY-1010 or PSY-101H (or equivalent transfer course)
 - ENG-1020 or ENG-102H (or equivalent transfer course)
 - MA-1020 (or equivalent transfer course)

See program website for most current information about prerequisite coursework: <http://www.tri-c.edu/programs/PhysicianAssistant>

- 10 year time limit on Science courses prior to matriculation
- GPA required: 3.00 overall. Completion of all prerequisite coursework with a grade of "B" or better

Other Information:

- Up to 50 students accepted per year.
- Completion of an application to Cuyahoga Community College and completion of a graduate application to be submitted to Cleveland State University upon notification of program acceptance.
- All students enrolled in Health Career and Nursing programs requiring off-campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Reports from the background checks will be sent to the Associate Deans of Health Careers at the campus of their program or the Assistant Dean of Nursing. Please be assured that this information will be kept confidential.
- All students are required to maintain adequate health insurance throughout the program. Information regarding health insurance will be required upon program acceptance.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Elicit a medical complete or problem specific history.
2. Perform a physical examination.
3. Develop a diagnostic plan.
4. Develop a therapeutic plan.
5. Provide education.
6. Document medical records.
7. Perform medical and surgical technical skills.
8. Utilize administrative and management skills.
9. Demonstrate professionalism.
10. Provide and expand professional education.

Suggested Semester Sequence		
<u>First Semester</u>		<u>Credits</u>
PA-1200	History and Physical Exam Techniques I	3
PA-1240	Clinical Anatomy	4
PA-1550	The Physician Assistant Profession	1
PA-1590	Introduction to Clinical Medicine	2
	Graduate MSHS coursework	4
	Graduate MSHS coursework	<u>3</u>
		17
<u>Second Semester</u>		<u>Credits</u>
PA-1210	History and Physical Exam Techniques II	3
PA-1250	Clinical Pharmacology	4
PA-1360	Adjuncts to Diagnosis	3
PA-1600	Clinical Medicine I	4
	Graduate MSHS coursework	4
	Graduate MSHS coursework	<u>3</u>
		21

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PHYSICIAN ASSISTANT (Continued)

<u>Summer Semester</u>		<u>Credits</u>
PA-1222	Basic Technical & Surgical Skills	2
PA-1350	Electrocardiography	1
PA-1620	Clinical Medicine III	4
Graduate MSHS coursework ¹		4
Graduate MSHS coursework		<u>3</u>
		14
<u>Third Semester</u>		<u>Credits</u>
PA-1232	Advanced Technical & Surgical Skills	2
PA-1370	Behavioral Medicine	2
PA-1610	Clinical Medicine II	4
PA-2302	Patient Management	2
PA-2501	Emergency Medicine	4
Graduate MSHS coursework		<u>3</u>
		17
<u>Fourth Semester</u>		<u>Credits</u>
PA-2611	Preparation for Practice	2
PA-2942	Field Experience I	4
PA-2972	Field Experience Seminar I	1
Graduate MSHS coursework		3
Graduate MSHS coursework		<u>3</u>
		13
<u>Summer 2 Semester</u>		<u>Credits</u>
PA-2952	Field Experience II	4
PA-2982	Field Experience Seminar II	1
Graduate MSHS coursework		<u>3</u>
		8
<u>Fifth Semester</u>		<u>Credits</u>
PA-2960	Field Experience III	2
Graduate MSHS coursework		<u>3</u>
		5
PROGRAM TOTAL		95

¹See Cleveland State University Graduate catalog for specific graduate course requirements.

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY

Associate of Applied Science degree in Plant Science and Landscape Technology

This ornamental horticulture program prepares students for entry level to middle management positions in the Green Industry. Many opportunities exist for graduates in landscape design and construction, landscape maintenance, wholesale nursery and greenhouse plant production, garden center management, inside sales, arboriculture and urban forestry, theme parks, public horticulture, arboreta, and much more. The curriculum of this two-year, full-time program includes a summer field experience between the first and second years and is composed of a balance of classroom, laboratory and practical educational experiences. This program is Fully Accredited by the Professional Landcare Network, meeting the national standard for industry performance. Classes are available both day and evening, and students may enroll on either a full- or part-time basis.

Program Manager: 216-987-2235

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 recommended
- Complete Math placement test

Other Information:

- Submit all college transcripts to Office of the Registrar.
- Certificate available in Landscape Technician.
- Garden Center Operations Concentration Available.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the team.
- 1a. Provide positive motivation to crew members by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project/product.
2. Apply Green Industry Standards of quality, artisanship, and environmental responsibility to all aspects of work within the scope of the industry.
3. Identify and describe cultural conditions for over 500 different ornamental landscape plants commonly found in the industry including deciduous and evergreen trees and shrubs, herbaceous perennials, and annuals.
4. Use knowledge of plants, soils, chemicals, fertilizers, and Integrated Pest Management, to identify, correct, or prevent plant disease, insect pest, and physiologic issues as part of an Integrated Plant Health Care Program and be prepared to pass the State of Ohio Pesticide Core exam.
5. Demonstrate ability to safely operate and perform preventative maintenance on hand tools as well as small and large power equipment found within the Green Industry as well as evaluate the best tool to safely accomplish each task with efficiency.

(continued on next page)

Program Sequences

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Continued)

6. Demonstrate effective oral and written communication skills to develop professional interpersonal relationships with suppliers, co-workers, and clients from diverse cultural backgrounds.
7. Effectively use math and the most recent technologies to create estimates for production of a product including labor and materials needed.
8. Sit, when eligible, for relevant industry certification exams including but not limited to Ohio Nursery and Landscape Association: Ohio Certified Landscape Technician and PLANET Landscape Industry Certified Technician.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HLTH-1230	Standard First Aid and Personal Safety	1
MATH-1xxx	1000-level MATH course or higher	3
PST-1311	Deciduous Woody Landscape Plants	3
PST-1411	Equipment Operations and Safety	2
PST-1510	Landscape Contracting ... OR (a)	3
PST-1330	Plant Propagation (b)	2
PST-1300	Horticultural Botany	3
		17 - 18

<u>Second Semester</u>		<u>Credits</u>
CHEM-1000	/PSCI-1020 Chemistry	3
CHEM-100L	/PSCI-102L Chemistry Lab	1
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1420	Landscape Practices	3
PST-1351	Plant Production (b) ... OR	3
PST-1431	Graphics for Landscape Design and Construction (a)	2
		15 - 16

<u>Summer Semester</u>		<u>Credits</u>
PST-2950	Field Experience	3
		3


<u>Third Semester</u>		<u>Credits</u>
BADM-1300	Small Business Management	4
PHIL-1000	Critical Thinking	3
PST-2320	Plant Pest Diagnostics	4
PST-2370	Introduction to Turfgrass	2
PST-1441	Introduction to Landscape Design (a)... OR	3
PST-1400	Garden Center and Nursery Management (b)	-
		16

<u>Fourth Semester</u>		<u>Credits</u>
PST-1600	Irrigation and Drainage	2
PST-2310	Soil Technology	3
PST-2380	Arboriculture	2
PST-2431	Planting Design (a) ... OR	3
PST-1450	Landscape Design - CAD (a) ... OR	3
PST-2450	Crop Cycles and Alternative Growing Methods ... OR (b)	3
BADM-2290	Urban Agribusiness Management (b)	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		13
PROGRAM TOTAL		64 - 66

OPTIONS

<u>(a) Landscape Design/Build</u>		<u>Credits</u>
This option stresses all areas of landscape contracting including landscape management, installation, hardscapes, and design. In the fourth semester, students can choose between PST-2431 or PST-1450 to complete the option.		
PST 1431	Graphics for Landscape Design and Construction	2
PST 1441	Introduction to Landscape Design	3
PST 1450	Landscape Design - CAD ...OR	3
PST 2431	Planting Design	3
PST 1510	Landscape Contracting	3

<u>(b) Garden Center/Nursery Management</u>		<u>Credits</u>
This option builds on basic landscape knowledge by stressing management of retail garden centers, wholesale nurseries, and crop production. In the fourth semester, students can choose between two Option courses listed below - PST-2450 or BADM-2290.		
BADM 2290	Urban Agribusiness Management ...OR	3
PST 2450	Crop Cycles and Alternative Growing Methods	3
PST 1330	Plant Propagation	2
PST 1351	Plant Production	3
PST 1400	Garden Center and Nursery Management	3

 Capstone course.

GARDEN CENTER

Short-Term Certificate

This two semester certificate program offers garden center management skills to persons who are seeking a career in retail garden center operations but who may not desire a full degree. The certificate is also helpful to those already employed in landscape or other green industries who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Garden Center Short-Term Certificate features course work in such horticulture basics as plant identification, and current landscape practices as well as essential business aspects of retailing in the green industry.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:

- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs to determine appropriate placement within the landscape.
2. Assist clients and customers with plant related problems and propose related solution(s).
3. Effectively communicate with customers, staff members, and managers and provide exceptional customer service.
4. Use merchandising and selling techniques within a retail atmosphere.
5. Analyze all aspects of financial management of garden center and create sound business plans and strategies.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</u>		
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PST-1311	Deciduous Woody Landscape Plants	3
PST-1330	Plant Propagation	2
PST-1400	Garden Center and Nursery Management	3
		11
<u>Second Semester</u>		
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1351	Plant Production	3
PST-2320	Plant Pest Diagnostics	4
		11
	PROGRAM TOTAL	22

LANDSCAPE CONTRACTING

Short-Term Certificate

This two semester certificate program offers basic landscaping skills to persons who are seeking a career in landscape contracting but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Contracting Short-Term Certificate features course work in such horticulture basics as plant identification, equipment operations, and current landscape practices.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:

- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the crew while providing positive motivation. Display an impeccable work ethic and provide positive reinforcement to instill ownership of the project.
2. Effectively maintain residential, commercial, industrial, multi-family, institutional, park and public properties lawn, bed and tree installations by properly weeding, deep edging, mulching, pruning, mowing, watering and fertilizing.

(continued on next page)

Program Sequences

LANDSCAPE CONTRACTING (Continued)

- Apply the green industry standards of quality through the practice of proper planting techniques and knowledge of landscape plants, weeds, and the culture and care of landscape plants.
- Demonstrate safe operation and maintenance of small and large-engine equipment used in landscape installations and maintenance.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1311	Deciduous Woody Landscape Plants	3
PST-1411	Equipment Operations and Safety	2
PST-1510	Landscape Contracting	3
		9
<u>Second Semester</u>		<u>Credits</u>
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1420	Landscape Practices	3
PST-1600	Irrigation and Drainage	2
PST-2370	Introduction to Turfgrass	2
		10
PROGRAM TOTAL		19

LANDSCAPE DESIGN

Short-Term Certificate

This two semester certificate program offers basic to advanced landscape design skills to persons who are seeking a career in landscape design but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Design Short Term Certificate features course work in such horticulture basics as plant identification, landscape design, landscape project estimating and management and current landscape practices.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:

- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- Ensure that a landscape design is properly created by actively listening, understanding, and implementing instructions and effectively translating them to select and place appropriate plants and materials in a landscape setting.
- Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs, and appropriate placement within the landscape.
- Demonstrate knowledge of landscape business requirements including estimating, profit and loss analysis, pricing strategies and customer relations.

<u>First Semester</u>		<u>Credits</u>
PST-1311	Deciduous Woody Landscape Plants	3
PST-1431	Graphics for Landscape Design and Construction	2
PST-1510	Landscape Contracting	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	-
		11
<u>Second Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1441	Introduction to Landscape Design	3
PST-1450	Landscape Design - CAD	3
		10
PROGRAM TOTAL		21

LANDSCAPE HORTICULTURE

Short-Term Certificate

This two semester certificate program offers advanced horticultural skills to persons who are seeking a career in landscape horticulture but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape or green industries who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Horticulture Short Term Certificate features course work in such horticulture topics as plant identification, plant pathology, soil technology, and arboriculture.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:

- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs to determine appropriate placement within the landscape.
2. Analyze plant micro-climates and the related effect on living organisms within them and prepare care and maintenance plans.
3. Demonstrate a knowledge of horticulture that can be transferred to interested segments of the population in a public setting, such as is found in botanical and public gardens.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
CHEM-1000	/PSCI-1020 Everyday Chemistry	3
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1311	Deciduous Woody Landscape Plants	3
PST-1330	Plant Propagation	<u>2</u>
		9
<u>Second Semester</u>		
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-2310	Soil Technology	3
PST-2370	Introduction to Turfgrass	2
PST-2380	Arboriculture	<u>2</u>
		10
	PROGRAM TOTAL	19

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY

(Landscape Technician)

Certificate of Proficiency

The one-year certificate program offers basic landscaping skills to persons who are seeking a career in landscape contracting but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable employee. The Landscape Technician Certificate of Proficiency features course work in such horticulture basics as botany, plant identification, plant diseases and insect pests, soil technology and landscape practices.

Program Manager: 216-987-2235

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Complete Math placement test.

Other Information:

- Submit all college transcripts to Office of the Registrar.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the crew while providing positive motivation by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project.
2. Effectively maintain residential, commercial, industrial, multi-family, institutional, park and public properties lawn, bed and tree installations by properly weeding, deep edging, mulching, pruning, mowing, watering and fertilizing.
3. Apply the green industry standards of quality through the practice of proper planting techniques and knowledge of landscape plants, weeds, and the culture and care of landscape plants.
4. Demonstrate safe operation and maintenance of small and large-engine equipment used in landscape installations and maintenance.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG 1010	College Composition I ...OR	3
ENG 101H	Honors College Composition I	
HLTH 1230	Standard First Aid and Personal Safety	1
MATH 1xxx	1000-level MATH course or higher	3
PST 1300	Horticultural Botany	3
PST 1311	Deciduous Woody Landscape Plants	3
PST 1411	Equipment Operations and Safety	<u>2</u>
		15

(continued on next page)

Program Sequences

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Continued)

<u>Second Semester</u>		<u>Credits</u>
BADM-1300	Small Business Management	4
PST 1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST 1420	Landscape Practices	3
PST 1510	Landscape Contracting	3
PST 1600	Irrigation and Drainage	2
		15
PROGRAM TOTAL		30

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Design/Build)

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another Plant Science and Landscape Technology program should make an appointment to see a counselor.

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Garden Center Operations)

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another Plant Science and Landscape Technology program should make an appointment to see a counselor.

POLYSOMNOGRAPHY (Sleep Disorders)

Certificate of Proficiency

A Polysomnographic technologist is a multi-skilled professional who works under the general supervision of a physician or designee to provide comprehensive evaluation and treatment of sleep disorders. The polysomnographic technologist records and analyzes the related data, reporting their technical findings to the physician to aid in rendering a medical decision. The learning concentration of the program is geared toward the specialties of sleep, medicine, respiratory, neurology and behavioral sciences. This program consists of on-campus didactic instruction and lab, as well as off-campus hands-on clinical application at our affiliated health care institutions.

Degree: Students may apply credits toward the Respiratory Care or Electroneurodiagnostic program, or meet with an academic counselor to determine if credits apply toward an Associate of Technical Studies degree.

Program Manager: 216-987-5654

Program Admission Requirements:

- High School Diploma/GED.
- Complete the following ("C" or higher in each):
BIO-1100 or CHEM-1010 and 1020
BIO-2331 (or BIO-2330)
- GPA required: 2.00 admission requirements; 2.00 overall.
- Clinical observation visits required (see details in application packet).

Other Information:

- 15 students accepted per year.
- Admissions requirements may be repeated only once to improve a grade below "C".
- Accepted applicants must attend a group information session prior to Fall Semester.
- Contact Program Manager, at 216-987-5654 for information or application packet.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally with members of the health care team and patient's family members (or care takers when appropriate) according to established guidelines.
2. To be able to work independently, as well as a member of a health care team; to ensure proper test and patient safety.
3. Act professionally, according to the Board Registered Polysomnographic Technical Code of Conduct and established institutional guidelines.
4. Educate the patient on sleep and sleep disorders and explain the procedures and equipment that will be used during testing within scope of practice.
5. Apply knowledge of anatomy and physiology, neurophysiology, cardiopulmonary, sleep and basic math in order to observe, gather, analyze, and document physiological parameters before, during, and after a sleep procedure.
6. Set-up, calibrate, monitor, and trouble shoot hardware. Run sleep software to acquire accurate and artifact free data while maintaining safety.
7. Observe patients, data, and equipment to react appropriately and safely.
8. Explain general lab management procedures.
9. Meet the educational requirements for registry eligibility for the RPSGT exam.

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹	3
BIO-2331	Anatomy and Physiology I ²	4
MATH-1141	Applied Algebra & Mathematical Reasoning or higher	3
END-1310	Cardiopulmonary Physiology of Sleep	3
END-1410	Beginning Polysomnography	2
		15

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POLYSOMNOGRAPHY (Continued)

<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II ²	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
END-1421	Intermediate Polysomnography I	2
END-142L	Intermediate Polysomnography-I Lab	1
END-1934	Polysomnography Directed Practice-I	3
		13

<u>Second Semester</u>		<u>Credits</u>
END-1430	Intermediate Polysomnography-II	3
END-1440	Neurophysiology of Sleep	2
END-2934	Polysomnography Directed Practice-II	3
		8

PROGRAM TOTAL 36

¹CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100.

²BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

PURCHASING AND SUPPLY MANAGEMENT

Associate of Applied Business degree in Purchasing and Supply Management

Purchases of materials, supplies and equipment represent a large part of a business or industrial firm's total cost of operation. Purchasing, because of its importance, is often designated as a separate responsibility to be handled by one or more individuals. Purchasing agents and their assistants are responsible for obtaining raw materials, goods and services at the lowest cost consistent with required quality. The majority of the nation's purchasing personnel are employed in service and manufacturing firms. Many also work in government agencies, public utilities, schools and hospitals.

Program Outcomes: The Associate of Applied Business Degree and the Post-Degree Professional Certificate program are designed to prepare students to demonstrate the following program outcomes:

1. Ability to work with a computer and operating systems, such as Windows and Microsoft Office (Word, Excel, PowerPoint, Access).
2. Apply an effective written and verbal communication strategy to meet the organization's objectives.
3. Effectively utilize personal management skills such as organization, leadership, professionalism, time management and ethics.
4. Apply general math skills to perform basic organizational ratios (return on investments, sales per employee, profit per employee, debt/equity) and understand measures and importance of positive returns.
5. Develop effective working relationships within a team or organization among diverse people.
6. Apply basic knowledge of business and economic principles and structures to achieve competitive advantage in a global marketplace in a socially responsible manner.

7. Collaborate on development of specification to purchase from the right source at the right time and right quality at the right price.
8. Monitor contract performance to ensure compliance with purchasing contractual obligations and determine need for further review and changes.
9. Source goods and services to meet the needs of the organization utilizing sound purchasing principles, supplier management techniques and code of ethics of the institute of supply management.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
BADM-2160	Introduction to Purchasing	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher ¹	4
		16

<u>Second Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
		14

<u>Third Semester</u>		<u>Credits</u>
ACCT-1340	Managerial Accounting	4
BADM-2110	Production/Operations Management	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
		14

<u>Fourth Semester</u>		<u>Credits</u>
BADM-2120	Logistics Management	3
BADM-2150	Business Law	4
BADM-2180	Purchasing Management C	3
BADM-2240	Negotiations	3
PHIL-2060	Business Ethics ²	3
		16

PROGRAM TOTAL 60

¹MATH-1800-1820 may not be used to meet this requirement; MATH-1270 or higher recommended for students planning to transfer.

²PHIL-2020 Ethics will be accepted in place of PHIL-2060.

C = Capstone course.

PURCHASING AND SUPPLY MANAGEMENT

Post-Degree Professional Certificate

This certificate program is designed for students who already have an associate or bachelor's degree. The program presents students with the theoretical background needed to function in today's dynamic supply environment. Students receive a general supply chain management education with course work in purchasing, logistics, production/operations management, negotiating, freight management, accounting and business law. Graduates are better prepared for careers in business and industry that deal with the issues of supply chain management. Courses included in this program serve as the foundation of study for the four modules leading to the A.P.P. and C.P.M. designation. Typical students considering this course of study are employed in or seeking employment in areas of business in manufacturing or service that deal with the supply management process.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-2160	Introduction to Purchasing	3
BADM-2120	Logistics Management	3
ECON-2620	Principles of Microeconomics	4
		17

Second Semester		Credits
BADM-2110	Production/Operations Management	3
BADM-2180	Purchasing Management	3
BADM-2240	Negotiations	3
BADM-2600	Introduction to World Trade	3
MARK-2010	Principles of Marketing	3
ACCT-xxxx	ACCT Program Elective ¹ ...OR	
BADM-xxxx	BADM Program Elective ¹ ...OR	
MARK-xxxx	MARK Program Elective ¹	3 - 4
		18 - 19
	PROGRAM TOTAL	35 - 36

¹ELECTIVES

		Credits
ACCT-1340	Managerial Accounting	4
BADM-2150	Business Law	4
BADM-2510	Import/Export Documentation	1
BADM-2520	Operational Issues in International Business	2
BADM-2530	International Sourcing and Logistics	2
BADM-2620	International Trade Finance and Insurance	2
BADM-2630	Legal Issues in International Business	1
BADM-2730	Channels of Distribution in International Markets	1
MARK-2020	Principles of Salesmanship	3

RADIOGRAPHY

Associate of Applied Science degree in Radiography

The Associate of Applied Science degree in Radiography prepares the student for an entry-level position as a radiographer, or radiologic technologist, in hospitals and other health care agencies. The radiographer administers radiation in the form of x-rays to create diagnostic images that aid the physician in the diagnosis and treatment of injury and disease. Responsibilities of the radiographer include adjusting equipment to the correct settings for each radiographic procedure, positioning the patient, manipulating equipment for proper imaging, and providing radiation protection. The radiographer understands radiation and knows how to produce high quality diagnostic examinations safely. The radiographer must apply knowledge of physics, anatomy and physiology, patient care and other related radiographic principles. Individuals interested in a career as a radiographer need a strong science and math background and possess a genuine interest in providing direct patient care with professionalism, compassion and a high degree of accuracy. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical rotations at affiliated health care institutions. Graduates of the program are eligible for the American Registry of Radiologic Technologists Certification Examination. The Radiography Program is accredited by: The Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Dr., Suite 2850, Chicago, IL 60606-3182. 312-704-5300. www.jrcert.org.

Program Manager: 216-987-5264

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete all Program Admission Requirement courses (listed in semester sequence) with "C" or higher.
- GPA required: 2.5 admissions requirements, 2.0 overall.

Other Information:

- 45-55 students accepted per year.
- MATH-1270 is a program admission requirement effective Fall 2013 semester. MATH-1200 will be accepted as a substitute for MATH-1270 for students who completed the math requirement prior to the Fall 2013 semester.
- There is no time limit on program admission requirement courses. However, applicants are advised that they will be held accountable for the content of those courses when they begin the Radiography Program. Students are strongly advised to review math and skeletal anatomy prior to beginning the program.
- Mandatory Radiography Program Information Session. Students **beginning the program in the fall 2015 semester and later** will be required to attend a Radiography Program Information Session prior to entering the program. Attendance at an information session does NOT need to be completed prior to applying but must be completed prior to program entry. Sessions are held once each semester and are posted on the program's webpage: www.tri-c.edu/radiography. Students are encouraged to bring a support person. Students must sign in to document their attendance and attend the entire session.

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RADIOGRAPHY (Continued)

- Applicants are encouraged, but are not required, to obtain exposure to the healthcare environment prior to application to the program. This can be accomplished through volunteering or working at a healthcare facility. Radiography requires extensive, direct patient care and radiography students must be able to handle the physical, emotional, and psychological demands of this type of work.
- Criminal background check required (see page 73).
- BIO-2200 and PHYS-2250 are considered radiography program courses and must be taken after program acceptance and along with the RADT courses listed in the Program Sequence. They cannot be completed while a student is waiting to start the program.
- A background check which includes fingerprinting and a court search will be required prior to final program admission. The results of the background check may prevent a student from being admitted into a healthcare program. The College's determination of acceptable background check results for the purposes of acceptance into the educational program does not guarantee a similar determination by other entities (i.e. clinical affiliates, future employers, and/or professional certifying organizations [i.e. American Registry of Radiologic Technologists]).
- Documentation of good health, immunizations and CPR certification is required prior to clinical assignment. Students accepted into the program will be notified by the program when they should begin collecting and submitting this documentation. Students will be dismissed from the program if significant limiting health conditions are present which prevent the student from performing the normal functions of a radiography student and/or constitute a hazard to the health or safety of patients.
- Students in the radiography program must achieve a grade of "C" or better in all RADT courses as well as BIO 2200 and PHYS 2250 in order to remain in good academic standing and progress through the program.
- Courses used as prerequisites, core courses, as well as all radiography specialty courses, MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, core and specialty courses will NOT be accepted to meet program graduation requirements.
- Non-native speakers of English are required to have completed the TOEFL (www.ets.org) with a minimum internet-based test score (iBT) of 24 required in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program's professional technical standards for written and verbal communication skills. Preparation for the test is highly recommended. The college offers a preparation course for the TOEFL. Preparation for, scheduling of, and costs incurred for the TOEFL are the sole responsibility of the student.
- Applicants are STRONGLY encouraged to attend a Radiography Program Information Session. Session dates are posted on the radiography program webpage at www.tri-c.edu/radiography.
- Students who have completed program admission requirements and who are waiting to begin the program are encouraged to complete PHIL-2050 and the Associate of Applied Science communication requirement.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Operates radiographic equipment to produce quality images.
2. Practices patient care including radiation safety.
3. Performs diagnostic imaging procedures for a diverse population of patients.
4. Demonstrates the ability to make decisions and use independent judgement.
5. Performs computer skills essential to the function of a radiology department.
6. Displays effective verbal/written communication skills while providing patient care.
7. Provides patient/public education related to radiographic procedures and radiation protection.
8. Demonstrates professional ethical behavior as a radiographer.
9. Prepares to enter the profession as a Registered Radiographer committed to professional development.

Suggested Semester Sequence

<u>Program</u>	<u>Admissions Requirements</u>	<u>Semester</u>	<u>Credits</u>
BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging ¹		4
DMS-1351	Patient Care Skills		1
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		
MA-1020	Medical Terminology I		3
PSY-1010	General Psychology ... OR		3
PSY-101H	Honors General Psychology		
MATH-1270	Intermediate Algebra ²		4
			18
<u>First Semester</u>			<u>Credits</u>
BIO-2200	Radiobiology		2
RADT-1300	Fundamentals of Radiography		4
RADT-1400	Radiographic Positioning		3
			9
<u>Second Semester</u>			<u>Credits</u>
RADT-1911	Clinical Radiography I ... OR		7
RADT-191S	Clinical Radiography I ³		5
			5 - 7
<u>Summer Semester</u>			<u>Credits</u>
RADT-1350	Radiographic Technique		3
RADT-1410	Intermediate Radiographic Positioning		3
RADT-2400	Imaging Systems		3
Communication...(See AAS Degree requirements)			3
			12
<u>Third Semester</u>			<u>Credits</u>
RADT-2911	Clinical Radiography II ... OR		7
RADT-291S	Clinical Radiography II ³		-
			7

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Program Sequences

RADIOGRAPHY (Continued)

<u>Fourth Semester</u>		<u>Credits</u>
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
PHYS-2250	Radiographic Physics and Quality Control	4
RADT-2350	Radiographic Pathology	3
RADT-2361	Interventional Radiography and Pharmacology ... OR	2
RADT-xxxx	RADT elective course ⁴	-
		12
<u>Summer 2 Semester</u>		<u>Credits</u>
RADT-2921	Clinical Radiography III C ... OR	5
RADT-292S	Clinical Radiography III ³	7
		5 - 7
PROGRAM TOTAL		70

¹BIO-2331 and BIO-2341 together will be accepted in place of BIO-1221.

²MATH-1270 or higher is a program admission requirement effective Fall 2013 semester. MATH-1200 will be accepted as a substitute for MATH-1270 for students who completed the math requirement prior to the Fall 2013 semester.

³Students beginning program in Fall Semester must take RADT-1911, 2911, 2921. Students beginning in Spring Semester must take RADT-191S, 291S, 292S. Students in the evening/weekend program must take either RADT-1911 (or modular courses RADT-191A and 191B depending on the college calendar), 291A, 291B, and 2921. RADT-191A and 191B are accepted in place of 1911; 291A & 291B are accepted in place of 2911.

⁴Elective course may be selected with approval from the Radiography Program.

C = Capstone course.

MAMMOGRAPHY

Short-Term Certificate

The short-term certificate in Mammography provides an opportunity for radiologic technologists registered in radiography to obtain education and clinical training in mammography. The mammographer specializes in imaging the breast to aid in the diagnosis and treatment of breast disease. The curriculum consists of on-line instruction, as well as off-campus clinical rotations at affiliated health care institutions. Those successfully completing the short-term certificate will be eligible for advanced level certification in mammography through the American Registry of Radiologic Technologists (ARRT).

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be obtained from the Health Careers Enrollment Center.

- Applicant must be a registered radiographer in good standing, certified by the American Registry of Radiologic Technologies (ARRT) and possess a current radiographic license through the state of Ohio. Documentation of ARRT certification and Ohio radiographic licensure must be submitted with the Health Careers Application.

Other Information:

- 8-10 students accepted per year.
- Criminal background check required (see page 73).
- Acceptance into the mammography short-term certificate program is contingent upon the results of the required background check. The college's determination of acceptable background check results for the purposes of acceptance into the educational program does not guarantee a similar determination by other entities (i.e. clinical affiliates, future employers, and/or professional certifying organizations [i.e. American Registry of Radiologic Technologists]).
- Courses taken MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option will NOT be accepted to meet certificate completion requirements.
- Documentation of good health, immunizations and CPR certification is required prior to clinical assignment. Students accepted into the program will be notified by the program when they should begin collecting and submitting this documentation. Students will be dropped from the program if significant limiting health conditions are present which prevent the student from performing the normal functions of a mammography student and/or constitute a hazard to the health or safety of patients.
- Students in the mammography program must achieve a grade of "C" or better in all mammography coursework in order to remain in good academic standing and progress through the program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Solicit and record patient's clinical history relevant to the examination including the documentation of anatomical characteristics.
2. Elicit patient cooperation and provide patient comfort, psychological support and education regarding the procedure and radiation safety.
3. Select and utilize equipment appropriate to the patient and examination to produce diagnostic images.
4. Select exposure factors specific to the patient and examination using appropriate markers to document breast(s) imaged and projections.
5. Position the patient to produce images specific to department protocol and physician's orders.
6. Evaluate the images to ensure proper identification and diagnostic quality.
7. Meet requirements for mammography certification eligibility through American Registry of Radiologic Technology.

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MAMMOGRAPHY (Continued)

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
RADT-2510	Fundamentals of Mammography ... OR	1-4
RADT-251A	Introduction to Mammography ... AND	
RADT-251B	Anatomy and Pathology of the Breast ...AND	
RADT-251C	Positioning Techniques for Breast Imaging ... AND	
RADT-251D	Physics of Mammography	4
<u>Second Semester</u>		<u>Credits</u>
RADT-2520	Advanced Procedures in Mammography... OR	1-4
RADT-252A	Sterile Technique and Interventional Procedures ... AND	
RADT-252B	Ultrasound Breast Imaging and Registry Review ... AND	
RADT-252C	Legal Issues and MQSA Guidelines ... AND	
RADT-252D	Accreditation Process for Mammography	
RADT-2930	Mammography Applications	<u>3</u> 7
PROGRAM TOTAL		11

REAL ESTATE

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another program should make an appointment to see a counselor.

REAL ESTATE (Mortgage Finance)

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another program should make an appointment to see a counselor.

RECORDING ARTS AND TECHNOLOGY

Associate of Applied Science degree in Recording Arts and Technology

The recording arts and technology program trains students for entry-level positions within the audio industry. Students receive broad-based training in music recording and mixing, location sound, commercial production, audio for video and television, internet audio, record production and live sound reinforcement. A field experience/internship component provides on-the-job training at local and national facilities. Graduates are employed in a wide variety of positions within the audio recording services industry.

Program Manager: 216-987-4252

Program Admission Requirements:

- Application Required - contact RAT Department at 216-987-3277.
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1xxx or higher

Other Information:

- GPA: 2.0 in program courses; 2.0 overall.
- Students interested in program or courses should contact the Recording Arts & Technology dept. at 216-987-3277.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally and in writing with clients, colleagues, vendors, and other professionals both technically and creatively to successfully complete projects.
2. Work independently and as a member of a team.
3. Demonstrate high technical and ethical standards.
4. Manage self in order to complete a project on time and within budget.
5. Apply computer and problem solving skills to overcome obstacles and complete projects.
6. Design, install, and operate Live Sound reinforcement systems.
7. Demonstrate proficiency in audio recording and productions techniques.
8. Manage and present a project that meets professional standards.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MUS-1130	MIDI Technology I	3
MUS-1230	Critical Listening	1
MUS-1200	Music Reading Skills	3
RAT-1300	Introduction to Recording	3
RAT-1310	Studio Operations	4
RAT-1320	Audio Transducers	<u>3</u>
		17

Program Sequences

RECORDING ARTS AND TECHNOLOGY (Continued)

<u>Second Semester</u>		<u>Credits</u>
MATH-1xxx	1000-level MATH course or higher	3
RAT-1500	Recording Theory I	3
RAT-1511	Recording Lab I	2
RAT-1520	Audio Signal Processing	3
RAT-1530	Digital Audio Theory	3
RAT-2540	Live Sound Reinforcement	<u>3</u>
		17
<u>Third Semester</u>		<u>Credits</u>
EET-1130	Basic Audio Electronics	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MUS-1110	Music Business I	3
RAT-2300	Recording Theory II	3
RAT-2311	Recording Lab II	2
RAT-2330	Digital Audio Mixing	3
RAT-2341	Location Recording	<u>2</u>
		19
<u>Fourth Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
ENG-2151	Technical Writing	3
MUS-1010	Survey of European Classical Music ... OR	3
MUS-1020	Survey of Jazz ... OR	
MUS-1030	Survey of Rock and Roll ... OR	
MUS-1040	Survey of African-American Music ... OR	
MUS-1050	Survey of World Music	
MUS-2140	Studio Maintenance	2
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
RAT-2990	Recording Arts and Technology Capstone C	3
RAT-xxxx	Any RAT elective course	<u>1</u>
		18
<u>Summer Session</u>		<u>Credits</u>
RAT-2940	Audio Recording Field Experience	<u>2</u>
		2
PROGRAM TOTAL		73

C = Capstone course.

RESPIRATORY CARE

Associate of Applied Science degree in Respiratory Care

Assess the cardiopulmonary system, assist in the treatment of cardiopulmonary impairment, evaluate treatment effectiveness and actively care for patients of all ages with deficiencies or abnormalities associated with the cardiopulmonary system. Opportunities exist for specialization within the profession in the areas of critical care, homecare, neonatal/pediatrics, education, pulmonary function testing and management as a licensed professional in respiratory care. The individual will, under the supervision of a physician, actively participate in the development of patient care plans, diagnostic testing and in the decision making process regarding the care and treatment of patients. Employment is primarily in hospitals but extends to home care, skilled nursing facilities, education and management. The respiratory care

program, associate of applied science degree at the Western campus is accredited by the Commission on Accreditation for Respiratory Care (www.coarc.com) located at 1248 Harwood Road, Bedford, Texas. 76021-4244. 817- 283-2835.

Program Manager: 216-987-5267

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete MATH-1141 or higher with "C" or higher**.
- Complete the following ("C" grade or higher in each):
BIO-1100 or CHEM-1010 and 1020
BIO-2331 (or BIO-2330)
- GPA required: 2.8 admissions requirements/core courses; 2.8 overall.
- Observation visit required (see details in application packet).

Other Information:

- 25 students accepted per year.
- Admissions/core courses may be repeated only once to improve a grade below "C".
- Accepted applicants must attend a group information session prior to Fall Semester.
- Criminal background check required (see page 73) prior to admission to the program. Contact the program manager for specific dates.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate ethical and professional behavior.
2. Assess, evaluate, interpret and prioritize clinical, therapeutic and mechanical patient data to ensure appropriate outcomes.
3. Teach, document and communicate therapy with patients, families and all medical personnel, following medical protocols.
4. Employ personal safe work methods and practice Universal Precautions in clinical and non-clinical settings.
5. Perform procedures used to diagnose and treat cardiopulmonary patients for all age groups.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹	3
BIO-2331	Anatomy and Physiology I ²	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
RESP-1300	Respiratory Care Equipment	4
RESP-1310	Cardiopulmonary Physiology	<u>3</u>
		23

(continued on next page)

RESPIRATORY CARE (Continued)

<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
RESP-1320	Acid-Base and Hemodynamics	2
RESP-1330	Cardiopulmonary Assessment and Pulmonary Diseases	5
RESP-1340	Pharmacology for Respiratory Care	2
		16
<u>Summer Semester</u>		<u>Credits</u>
PHIL-2050	Bioethics ...OR	3
PHIL-205H	Honors Bioethics	
RESP-2210	Introduction to Mechanical Ventilation	1
RESP-2300	Basic Therapeutic Procedures	3
RESP-2910	Respiratory Care Directed Practice I	3
		10
<u>Third Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
RESP-2310	Mechanical Ventilation	4
RESP-2320	Pediatric/Neonatal Respiratory Care	2
RESP-2920	Respiratory Care Directed Practice II	5
		15
<u>Fourth Semester</u>		<u>Credits</u>
RESP-2330	Respiratory Home Care/Rehabilitation	1
RESP-2341	Patient Management Problems	1
RESP-2930	Respiratory Care Directed Practice III C	5
		7
PROGRAM TOTAL		71

¹CHEM-1010 and 1020 will be accepted in place of BIO-1100.
²Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100.

C = Capstone course.

SPORT AND EXERCISE STUDIES

Associate of Applied Science degree in Sport and Exercise Studies

The Sport and Exercise Studies program is designed to prepare students for entry-level roles in Sport and Exercise Studies profession including: Fitness Specialist, Personal Trainer, Fitness Coordinator, Group Fitness Instructor, Specialty Instructor, and Sport Coach. The core curriculum includes Teaching Exercise Techniques, Advanced Training Concepts, Sport Injury Care, First Aid, CPR/AED, Fitness Management, Exercise Physiology, Kinesiology, Fitness and Wellness Coaching, Exercise Testing, Exercise Prescription and Program Design, technical electives, and practicum field experience. The program prepares students to take a variety of nationally recognized and accredited Personal Training and Group Fitness Instructor certifications.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED equivalency/ approved PSEOP student
- Eligibility for ENG-1010
- Eligibility for MATH-1060 or higher (MATH 1270 Intermediate Algebra or higher is highly recommended for students transferring to a four year college/university)
- PE-1000 or 1010 or verification of personal training certificate or previous exercise training experience.
- Verification of having completed a 4-8 hour observation where the candidate "shadows" a Fitness Professional in their work environment. See details in application packet.
- GPA required: 2.0 Admissions Requirement, 2.0 overall
- The following courses are recommended for students transferring to a four-year college/ university: MATH-1270 or higher, BIO 1500, BIO 2331, BIO 2341
- The following courses are recommended for students not transferring to a four-year college/ university: BIO-1050, BIO-105L, SES-2010.

Other Information:

- Criminal background check required (see page 73).
- Students with a BCI record are not guaranteed acceptance into the program, a practicum site, or employment in a health career field.
- Students may need to complete additional requirements depending on their chosen practicum site.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate proficiency interpreting health status and risk stratification data and performing industry-standard fitness assessments and exercise tests.
2. Effectively demonstrate a variety of exercises and teach safe and correct use of exercise equipment and other exercise apparatus.
3. Effectively design, implement, supervise, and evaluate exercise prescriptions and exercise programs using assessment-based data and in accordance with client's needs, goals, and interests.

(continued on next page)

Program Sequences

SPORT AND EXERCISE STUDIES (Continued)

4. Effectively educate, motivate and communicate healthy lifestyle behavior modifications.
5. Perform safe, ethical, and legal practices in a variety of health and fitness-related settings within the scope of practice.
6. Demonstrate organizational and administrative leadership by establishing program, business, risk management, budgetary and financial plans.
7. Demonstrate skill in designing, planning, marketing and administering effective fitness, recreational, sport, and wellness activities and programs.
8. Model principles of professional conduct and ethics according to industry standards.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ... AND	3
BIO-105L	Human Biology Laboratory ... OR	1
BIO-1500	Principles of Biology I ¹	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
EMT-1310	Cardiopulmonary Resuscitation ... OR	1
HLTH-1310	Cardiopulmonary Resuscitation ... OR	
HLTH-1230	Standard First Aid and Personal Safety	
HLTH-1100	Personal Health Education	3
SES-1001	Introduction to Sport and Exercise Studies	2
SES-1040	Teaching Exercise Training Techniques	3
		16

<u>Second Semester</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ² ... OR	4
SES-2010	Exercise and Movement Anatomy	
MATH-1xxx	1000-level MATH course or higher	3
SES-1201	Fitness and Wellness Coaching	3
SES-2000	Essentials of Sports Injury Care	3
SES-2310	Advanced Training Concepts and Techniques	3
		15 - 16

<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	3
SPCH-1000	Fundamentals of Interpersonal Communication ... OR	3
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
BIO-2341	Anatomy and Physiology II ... OR	4
SES-xxxx	Fitness and Exercise Studies elective	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	3
SES-2100	Sport and Exercise Physiology	3
SES-2210	Exercise Testing, Measurement, and Evaluation	3
		15 - 16

<u>Fourth Semester</u>		<u>Credits</u>
DIET-1200	Basic Nutrition	3
SES-2130	Kinesiology: Fundamentals of Human Movement	3
SES-2220	Exercise Prescription and Program Design	3
SES-xxxx	Fitness and Exercise Studies elective	3
SES-2840	Practicum: Sport and Exercise Studies C	2
		14
	PROGRAM TOTAL	60 - 62

ELECTIVES

Technical Electives

Credits

Select from the following courses to fulfill Sport and Exercise Studies elective:

SES 1100	Fundamentals of Fitness and Sport Management	3
SES 2300	Personal Training Certification Preparation	3
SES 2320	Group Fitness Instructor	3
SES 2330	Motor Learning and Development	3
SES 2340	Analysis of Motor Skills	3
SES 2350	Exercise For Special Populations	3
SES 2400	Sports Coaching: Principles and Concepts	3

¹BIO 1100 or CHEM 1010 and CHEM 1020 will be accepted for BIO 1500.

³BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

C = Capstone course.

STERILE PROCESSING AND DISTRIBUTION TECHNOLOGY

Certificate of Proficiency

The sterile processing and distribution technician decontaminates, inspects, assembles, and sterilizes instruments and surgical trays. The technician also manages inventory control, orders supplies, inspects, maintains, delivers and retrieves equipment and instruments for the surgery suite, emergency room and intensive care units. A hands-on clinical practicum experience in an area hospital is included in the course of study. This program prepares graduates for eligibility for the Sterile Processing and Distribution Technician Certification by the CBSPD, Certification Board for Sterile Processing and Distribution.

Degree: Students may apply credits toward the Surgical Technology Program or meet with an academic counselor to apply credits toward an Associate of Technical Studies degree.

Program Manager: 216-987-6146

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-1010
- Complete MATH-0950 with "C" or higher.
- Complete MA-1020 with "C" or higher.
- GPA required: 2.0 admission requirements; 2.0 overall.

Other Information:

- 16 students accepted per year.
- MA-1020 must have been completed within seven years of admission to program and may only be repeated once to improve a grade.
- Criminal background check required (see page 73).
- Non-native English speaking applicants are required to take and pass TOEFL with minimum scores: Reading 21, Listening 22, Writing 23, and Speaking 24. Arrangements and cost incurred for the TOEFL will be the responsibility of the student.
- Students wishing to apply coursework to the Surgical Technology Degree - to be eligible to enroll in BIO-2331 students must either achieve the appropriate placement score on the Biology placement test or complete BIO-1100 with "C" or higher or complete CHEM-1010 and CHEM-1020 with "C" or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply the principles and techniques of decontamination to render medical devices safe to handle without protective attire.
2. Inspect, assemble, pack, and wrap medical devices in preparation for appropriate sterilization process and/or distribution.

3. Safely selects and performs proper sterilization techniques, validates sterility assurance level monitoring, and maintains sterilization integrity during storage.
4. Inventory, stock, and/or distribute medical/surgical supplies to meet patient care areas needs in a cost efficient manner.
5. Communicate verbally and in writing to co-workers, customers, and suppliers to ensure that pertinent departmental information is shared in a timely manner to meet organizational needs.
6. Demonstrate professional conduct and work practices according to appropriate federal regulations, industry standards, and facility policies.
7. Prepared to sit for Sterile Processing & Distribution Technician Certification Exam given by the Certification Board for Sterile Processing and Distribution (CBSPD).

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry.... OR	3
BIO-1050	Human Biology ¹	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
MATH-1060	Survey of Mathematics ...OR	3
MATH-1141	Applied Algebra and Mathematical Reasoning or higher ²	
SURT-1700	Sterile Processing Tech I	4
SURT-1720	Introduction to Hospital Administration	$\frac{1}{17}$
<u>Second Semester</u>		<u>Credits</u>
HTEC-1110	Ethics for Health Care Professionals	1
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SPCH-1000	Fund of Interpersonal Communication OR	3
SPCH-1010	Fundamentals of Speech Communication	
SURT-1710	Sterile Processing Tech II	4
SURT-1861	Clinical Experience: Sterile Processing	$\frac{2}{13}$
PROGRAM TOTAL		30

¹BIO-1050 is a lecture course only, and may be selected in place of BIO-1100 if working for the Certificate only. Students wishing to apply coursework to the Surgical Technology degree program must take BIO-1100.

²Students wishing to transfer coursework into the degree program should take MATH-1141.

SURGICAL TECHNOLOGY

Associate of Applied Science degree in Surgical Technology

A surgical technologist assists the surgeon and assistants by passing instrumentation and supplies during surgical procedures. As a surgical team member, surgical technologists work with other surgical personnel to prepare the operating room for a variety of surgical cases. The program provides a hands-on lab surgery and four semesters of clinical experience to enable students to gain essential surgical skills. Students will be prepared to take the Certified Surgical Technologist (CST) Examination. A surgical technologist may be employed in the surgical department of hospitals and outpatient surgery centers. The program is fully accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Program Manager: 216-987-6146

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Eligibility for MATH-1141.
- Complete the following :
 - MA-1020 with "C" grade or higher.
 - BIO-2331* (or 2330) with "C" grade or higher.
 - SURT-1000 with "B" or higher.
- Time limit on admissions requirements prior to application is seven years (see Notes below).
- GPA required: 2.5 admissions requirements; 2.5 overall.

Other Information:

- Fourteen students accepted per year (contingent upon available clinical sites)
- *To be eligible to enroll in BIO-2331 students must either achieve the appropriate placement score on Biology placement test or complete BIO-1100 with "C" or higher or complete CHEM-1010 and CHEM-1020 with "C" or higher.
- All admission requirements (except ENG-1010 & MATH-1141) must have been completed within the past seven years, and may only be repeated once to improve a grade.
- Upon acceptance to the program and prior to a clinical assignment, students must submit evidence of good health, personal healthcare insurance coverage, and certification in CPR.
- Accepted candidates will be required to attend a student orientation session after acceptance into the program.
- Program only starts in the Fall Semester. Students are strongly encouraged to take BIO-2341 and BIO-2500 and may take any of the GERS and Program Requirements (other than the "SURT" courses) while waiting.
- Non-native English speaking applicants are required to take and pass TOEFL with minimum scores: Reading 21, Listening 22, Writing 23, and Speaking 24.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply principles of aseptic technique in the O.R. setting according to AST guidelines.
2. Demonstrate competence in skills required during the peri-operative event to insure the clients and staff's safety and optimal surgical outcome.

3. Demonstrate professional conduct according to the AST Code of Ethics and departmental policies.
4. Apply knowledge of Anatomy and Physiology, Microbiology, Pharmacology, and Medical Terminology within the surgical environment.
5. Effectively communicate with the O.R. team members during the peri-operative event according to the facility policies & procedures and surgeon preferences.
6. Prepares graduates for the Certified Surgical Technologist (CST) Examination.

Suggested Semester Sequence

<u>Program Admissions Requirements</u>	<u>Semester</u>	<u>Credits</u>
BIO-2331	Anatomy and Physiology I	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
SURT-1000	Survey of Surgical Technology	1
		11

<u>First Semester</u>	<u>Credits</u>	
BIO-2341	Anatomy and Physiology II	4
HTEC-1610	Introduction to Pharmacology	2
SURT-1300	Introduction to Surgery	5
SURT-130L	Surgery Lab	2
		13

<u>Second Semester</u>	<u>Credits</u>	
BIO-2500	Microbiology	4
SURT-1330	General Surgery	5
SURT-1911	Clinical Experience I	3
		12

<u>Summer Semester</u>	<u>Credits</u>	
SURT-1921	Clinical Experience II	2
		2

<u>Third Semester</u>	<u>Credits</u>	
MA-2010	Medical Terminology II	2
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
SURT-2300	Surgical Specialties	5
SURT-2851	Clinical Experience III	3
		13

<u>Fourth Semester</u>	<u>Credits</u>	
SURT-2862	Clinical Experience IV C	4
PHIL-2050	Bioethics	3
SPCH-1000	Fundamentals of Interpersonal Communication ... OR	3
SPCH-1010	Fundamentals of Speech Communication ...OR	
SPCH-101H	Honors Fundamentals of Speech Communication	-
		10
	PROGRAM TOTAL	61

C = Capstone course.

VETERINARY TECHNOLOGY

Associate of Applied Science degree in Veterinary Technology

Veterinary technicians work under the supervision of a licensed veterinarian to provide health care for animals in various settings. Career options for graduate technicians include private practices, emergency clinics, specialty clinics, educational institutions, research facilities, government agencies and zoological parks. Students work with companion animals, food animals, horses, laboratory animals and exotic species throughout this program.

Program Manager: 216-987-5450

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H or higher with a "C" or higher.
- Complete MATH-1141 or higher with a "C" or higher.
- Complete BIO-1100 or CHEM-1010 or higher with a "C" or higher.
- GPA required: 2.5 admissions requirements, 2.0 overall.
- Written verification of 10 hours of recent (within one year of application) observation/shadowing or employment in a veterinary facility.

Other Information:

- 25 students per year are accepted into the program.
- Admissions requirement courses may be repeated only once to improve a grade below "C".
- Upon acceptance to the program and prior to matriculation, the applicant will be required to fulfill the health requirements of the veterinary technology program.
- Accepted candidates will be required to attend a group information session (information indicated in acceptance letter).
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize knowledge and interpersonal skills to educate clients and communicate with colleagues.
2. Obtain, process, analyze, and record accurate multi-modal diagnostic information.
3. Ensure compliance with state and federal regulations and act in a professional and ethical manner in accordance with AVMA and NAVTA Guidelines.
4. Identify and understand the pharmacology and effects of drugs and therapeutic substances in various animal species.
5. Operate and maintain veterinary equipment and facilities.
6. Provide proficient animal husbandry, medical, and surgical care.
7. Apply organizational principles and practices that permit a facility to provide quality patient care and client service.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ... OR	3-4
CHEM-1010	Introduction to Inorganic Chemistry ... OR	
CHEM-101H	Honors Introduction to Inorganic Chemistry	
BIO-1410	Anatomy and Physiology of Domestic Animals I	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
VT-1100	Veterinary Medical Terminology	1
VT-1200	Veterinary Law and Ethics	1
VT-1320	Veterinary Office Applications	3
VT-1401	Veterinary Science I	<u>4</u>
		19 - 20

<u>Second Semester</u>		<u>Credits</u>
BIO-1420	Anatomy and Physiology of Domestic Animals II	3
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
VT-1451	Veterinary Diagnostic Imaging	2
VT-1500	Veterinary Science II	4
VT-1520	Veterinary Parasitology	2
VT-1600	Veterinary Surgical Nursing and Assisting	<u>3</u>
		17

<u>Summer Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
VT-2300	Pharmacology for Veterinary Technicians	2
VT-2401	Veterinary Pathology I	2
VT-2851	Veterinary Practicum and Seminar I	<u>1</u>
		9

<u>Third Semester</u>		<u>Credits</u>
SPCH-1010	Fundamentals of Speech Communication ... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
VT-2411	Veterinary Pathology II	2
VT-2500	Small Animal Health and Disease	2
VT-2510	Large Animal Health and Disease	2
VT-2600	Anesthesiology, Emergency Techniques and Dentistry	3
VT-2860	Veterinary Practicum and Seminar II	<u>2</u>
		14

<u>Fourth Semester</u>		<u>Credits</u>
VT-2700	Avian and Exotic Animal Medicine	2
VT-2940	Veterinary Field Experience C	2
	Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)	<u>3</u>
		7

PROGRAM TOTAL 66 - 67

C = Capstone course.

VISUAL COMMUNICATION & DESIGN (Digital Video and Digital Filmmaking)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Digital Video and Digital Filmmaking

The goal of the Digital Video and Digital Filmmaking Degree Program is to prepare graduates for a rewarding career in Motion Media. Possible career paths include television production, short and feature filmmaking, editorial, special effects/ visual effects production, motion graphics design, and motion media content creation and preparation for High Definition distribution in a variety of formats from theatrical, to corporate in-house, to web-based delivery. The curriculum is based on professional standards drawn from the practices of advertising agencies, design studios, media and independent production companies and in-house or corporate media departments.

Program Manager: 216-987-5567

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 highly recommended
- Eligibility for MATH-1060 or higher, highly recommended

Other Information:

- Contact Program Coordinator for additional information
- Non-degree students may enroll in individual courses if prerequisites are met.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply good interpersonal skills including collaboration, flexibility, adaptability, cultural diversity, stress management, coping with frustration, work ethic, and willingness to learn new skills to work as an effective team member to meet the client's needs.
2. Use good listening, written, and verbal communication skills to present yourself professionally, follow directions, and interact with clients, stakeholders, and project team members.
3. Use good time management, organizational, flowcharting, business, and technical skills to manage multiple responsibilities and meet project deadlines.
4. Apply knowledge of copyright law and ethics to ensure the integrity of project for the client.
5. Tell a story using appropriate digital media, principles of design, color, typography, motion, sound and timing to create an emotional response that supports the client's message.
6. Research and acquire necessary source content.
7. Determine tools, timeline and scope of project.
8. Compellingly present concept to client or stakeholder.
9. Translate a stakeholder's need into a creative concept that motivates, persuades or causes a specific outcome.
10. Apply technical components of visual media production adapted to location; such as, live event, studio, or on-location.

11. Utilize technical problem solving and creative thinking skills to combine production elements with a focus on media editing/compositing/motion design with an understanding of content distribution.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1015	Digital Studio Basics	3
VC&D-1000	Visual Communication Foundation	3
VCPH-1261	Photography I	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
		18
<u>Second Semester</u>		
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
JMC-1310	Film Appreciation	3
RAT-1100	Sound Recording and Design	3
VCDV-2180	Digital Cinematography	3
VC&D-1430	2D Design	3
		15
<u>Third Semester</u>		
BADM-1050	Professional Success Strategy	3
MARS-2110	Editing	3
VCDV-2280	Advanced Digital Video and Digital Filmmaking: Exploring Genre and Technique	3
VCDV-2480	Motion Graphics for Digital Video	3
VCIM-2270	Animation for the Web and Media	3
		15
<u>Fourth Semester</u>		
VC&D-2530	Professional Practice in Visual Communication and Design ... OR	3
MARS-2940	MARS Field Experience	1 - 2
VCDV-2680	Advanced Digital Cinematography	3
VCDV-2xxx	VCDV Elective ... OR	3
MARS-xxxx	MARS elective	
VC&D-2991	Portfolio Preparation C ¹	3
Soc & Beh Sci/Sci	(See AAB/AAS degree requirements)	3
		13 - 15
	PROGRAM TOTAL	61 - 63

¹MARS-2990 will be accepted in place of VC&D-2991.

C = Capstone course.

ELECTIVES

<u>Technical Elective</u>		<u>Credits</u>
To fulfill the technical elective requirement for any 2000 level VCDV class (VCDV 2xxx) you must choose from the following options		
MARS 2120	Advanced Editing	3
VCDV 2380	Visual Effects Compositing for Digital Video	3
VCDV 2580	Digital Versatile Disk (DVD) Authoring and Design	3
VCDV 2780	Advanced Motion Graphics	3

VISUAL COMMUNICATION & DESIGN (Graphic Design)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Graphic Design

The Graphic Design degree program prepares students for positions with graphic design firms, in-house design departments, exhibit and package design firms, publishers, broadcast media, printers and media design companies. The Graphic Design curriculum is based on professional standards in creating a designer portfolio, preparing the graduates for a variety of full-time or freelance employment in the graphic design industry. Students have an opportunity to develop or upgrade drawing and computer graphics skills for communicating visually. Emphasis is on design for print and media, studio skills and critical thinking applications. Problem solving and research concept development projects are explored and applied as they relate to the graphic design professional.

Program Manager: 216-987-5567

Program Admission Requirements:

- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 highly recommended
- Eligibility for MATH-1060 or higher* highly recommended
- Complete VC&D-1010

Other Information:

- Contact Program Coordinator, Program Manager or Counselor for additional information
- Non-degree students may enroll in individual courses with departmental approval.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate and connect verbally and in writing to clients, colleagues, and other professionals.
2. Conduct yourself professionally and ethically according to professional standards.
3. Develop team skills including taking and giving constructive criticism, leading and /or following directions.
4. Apply basic production knowledge, including fundamental understanding of page layout, typography, photography, color, and use computer and design software skills to effectively execute all aspects of production – print and/or web.
5. Apply the knowledge of basic business and design concepts, including design history and trends, photography and illustration, basic typography skills, appropriate mediums and business concepts including dealing with vendors, organizational hierarchy and workflow, written and verbal communication skills in order to translate ideas into final art that meets business need.
6. Use design principles – color, composition, and type – to executive project objectives.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VC&D-1061	History of Graphic Design	3
VC&D-1200	Typography and Layout	3
Arts & Humanities (see AAB/AAS degree requirements)		<u>3</u>
		18
<u>Second Semester</u>		<u>Credits</u>
ART-1050	Drawing I	3
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1430	2D Design	3
VCGD-1500	Advertising and Design	3
Communication...(See AAB Degree requirements)		<u>3</u>
		15
<u>Third Semester</u>		<u>Credits</u>
VC&D-2301	Graphic Design and Illustration	3
VCGD-2231	Publication Design	3
VCGD-2331	Brand Identity Design	3
VCXX-xxxx	Visual Communication & Design elective	3
Soc & Beh Sci (See AAB/AAS degree requirements)		<u>3</u>
		15
<u>Fourth Semester</u>		<u>Credits</u>
VC&D-2701	Media Design	3
VC&D-2991	Portfolio Preparation C	3
VCGD-2431	Package Design ... OR	3
VCAD-2520	Creative Advertising Campaign	
VCGD-2631	Graphic Design Studio ... OR	3
VCAD-2621	Advertising Studio I	3
VCXX-xxxx	Visual Communication & Design elective	<u>3</u>
		15
PROGRAM TOTAL		63

C = Capstone course.

VISUAL COMMUNICATION & DESIGN (Graphic Design)

Certificate of Proficiency

This one-year certificate program is designed to accommodate individuals who want to upgrade their design, drawing and computer graphics skills. The courses are designed to improve the graduate's design, drawing, research, and problem solving techniques.

Degree: Students may apply credits toward the Visual Communication & Design program with a concentration in Graphic Design.

Program Admission Requirements:

- High School Diploma/GED highly recommended, but not required.
- Eligibility for ENG-1010 highly recommended.
- Eligibility for MATH-1060 or higher highly recommended.
- Complete VC&D-1015.

Other Information:

- Non-degree students may enroll in individual courses with departmental approval.

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**VISUAL COMMUNICATION & DESIGN
(Graphic Design) (Continued)**

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate and connect verbally and in writing to clients, colleagues, and other professionals.
2. Conduct yourself professionally and ethically according to professional standards.
3. Develop team skills including taking and giving constructive criticism, leading and /or following directions.
4. Apply basic production knowledge, including fundamental understanding of page layout, typography, photography, color, and use computer and design software skills to effectively execute all aspects of production – print and/or web.
5. Apply the knowledge of basic business and design concepts, including design history and trends, photography and illustration, basic typography skills, appropriate mediums and business concepts including dealing with vendors, organizational hierarchy and workflow, written and verbal communication skills in order to translate ideas into final art that meets business need.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VC&D-1060	History and Trends in Visual Communication and Design	3
VC&D-1200	Typography and Layout	3
VC&D-1430	2D Design	3
		18
<u>Second Semester</u>		<u>Credits</u>
MATH-1060	Survey of Mathematics or higher	3
VC&D-2301	Graphic Design and Illustration	3
VCGD-1500	Advertising and Design	3
VCIL-1640	3D Design	3
VCGD-2231	Publication Design ... OR	3
VCGD-2331	Brand Identity Design ... OR	
VCGD-2431	Package Design	
VC&D-2701	Media Design ... OR	3
VC&D-2991	Portfolio Preparation	-
		18
	PROGRAM TOTAL	36

**VISUAL COMMUNICATION & DESIGN
(Illustration)**

Associate of Applied Business degree in Visual Communication & Design with a concentration in Illustration

The Illustration degree program prepares students for positions as 2D or 3D illustrators in design and visualization studios, ad agencies, publishing houses, media studios or freelance contractors. The Illustration curriculum is based on professional standards in building a marketable portfolio, preparing graduates for a variety of full-time or freelance employment in Visualization, Illustration and Visual Communication industries. Students have an opportunity to develop or upgrade drawing, rendering, modeling and digital illustration skills. Emphasis is on the creation of illustration for print and digital media, studio skills, conceptual and critical thinking, problem solving and editorial research projects as they relate to the illustration professional.

Program Manager: 216-987-5567

Program Admission Requirements:

- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 highly recommended
- Eligibility for MATH-1060 or higher highly recommended
- Contact Program Coordinator, Program Manager or Counselor for additional information

Other Information:

- Non-degree students may enroll in individual courses with departmental approval.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply effective verbal, written and visual communication skills to present a concept, idea, or portfolio to co-workers, clients and other professionals.
2. Follow directions, give and receive criticism and work effectively in a team environment to solve visual communication problems.
3. Research and assess technical and creative aspects of multiple projects to satisfy client needs and to continually evaluate and improve professional skills and practices.
4. Apply knowledge of art history, theories and principles to traditional and digital drawing and design skills for visual communication applications relevant to contemporary applied art markets.
5. Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable art business.

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**VISUAL COMMUNICATION & DESIGN
(Illustration) (Continued)**

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ART-1050	Drawing I	3
ART-1080	Visual Design I ... OR	3
VC&D-1000	Visual Communication Foundation	
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1015	Digital Studio Basics	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
ART-1060	Drawing II	3
VC&D-1430	2D Design	3
VCIL-1141	Rendering Techniques	3
VCIL-1640	3D Design	3
Communication...(See AAB Degree requirements)		<u>3</u>
		15
<u>Third Semester</u>		<u>Credits</u>
VC&D-2301	Graphic Design and Illustration	3
VCIL-2040	3D Motion	3
VCIL-2141	Illustration Techniques	3
VCXX-xxxx	Visual Communications elective	3
Arts & Hum (see AAB/AAS degree requirements)		<u>3</u>
		15
<u>Fourth Semester</u>		<u>Credits</u>
VC&D-2991	Portfolio Preparation C	3
VCIL-2341	Illustration for Story, Sequence & Narrative	3
VCIL-2641	Illustration Studio ... OR	3
VCIL-2540	3D Studio	
VCIM-2270	Animation for the Web and Media...OR	3
VCIM-1200	Game Design I: Introduction to Game Design	
Soc & Beh Sci/Sci (See AAB/AAS degree requirements)		<u>3</u>
		15
	PROGRAM TOTAL	60

C = Capstone course.

3D ANIMATION

Short-Term Certificate

Students who participate in the certificate sequence will develop knowledge, skills and abilities in 3D Animation techniques to prepare for professional and academic opportunities in Visual Communication and Design or related fields that emphasis 3D Modeling, Animation, Illustration and Visualization.

This certificate is intended for students with no previous design experience or students interested in an immersive exploration of 3D Animation. Credits can apply to associate degrees in Visual Communication and Design.

Degree: Students may apply credits toward any of the Associate of Applied Business degrees under Visual Communication and Design.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen and understand complex ideas, present and communicate visually, verbally and in writing to colleagues and clients.
2. Work independently and as an organized member of a production team to meet client requirements on time and within budget.
3. Demonstrate professional work ethics and a passion for life long learning and networking.
4. Use design elements, principles and the basic building blocks of the 3D process. Modeling, lighting/texturing, animation and rendering to create a 3-D composition.
5. Design a concept, strategy and story board to visualize a product or message to reach the target audience that meets the production schedule and budget.
6. Use appropriate hardware, software and resources to create high quality computer graphic imagery in a production environment.
7. Composite/edit production elements to deploy final product that meets client distribution requirements.
8. Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable business.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIL-2040	3D Motion	3
VCIM-1200	Game Design I: Introduction to Game Design	<u>3</u>
		12
<u>Second Semester</u>		<u>Credits</u>
VC&D-2701	Media Design	3
VCIL-2540	3D Studio	3
VCIM-2270	Animation for the Web and Media	3
VCXX-xxxx	Visual Communication & Design elective	<u>3</u>
		12
	PROGRAM TOTAL	24

3D DESIGN

Short-Term Certificate

The certificate in 3D Design provides students with education and professional development opportunities in 3D Design and Visualization. Students will participate in a fast-track sequence focusing on the fundamentals of 3D Modeling and Animation.

This certificate is intended for students with previous design experience or students who want a focused educational experience in 3D Design and Visualization.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

- 1 Listen and understand complex ideas, present and communicate visually, verbally and in writing to colleagues and clients.
- 2 Work independently and as an organized member of a production team to meet client requirements on time and within budget.
- 3 Demonstrate professional work ethics and a passion for life long learning and networking.
- 4 Use design elements, principles and the basic building blocks of the 3D process. Modeling, lighting/texturing, animation and rendering to create a 3-D composition.
- 5 Design a concept, strategy and story board to visualize a product or message to reach the target audience that meets the production schedule and budget.
- 6 Use appropriate hardware, software and resources to create high quality computer graphic imagery in a production environment.
- 7 Composite/edit production elements to deploy final product that meets client distribution requirements.
- 8 Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable business.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIL-2040	3D Motion	3
VCIM-1200	Game Design I: Introduction to Game Design	3
		12
<u>Second Semester</u>		<u>Credits</u>
VCIL-2540	3D Studio	3
VCXX-xxxx	Visual Communications elective	3
		6
	PROGRAM TOTAL	18

VISUAL COMMUNICATION & DESIGN (Photography)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Photography

This concentration prepares students to enter a broad range of photographic careers in editorial, advertising, corporate communications, wedding and portrait photography, digital retouching and post production, styling and production assisting. The curriculum is based on professional imaging standards and practices in a rapidly changing field. Emphasis on development of the visual, technical and business skills required in today's market enables our graduates to respond effectively to the changing demands of our multimedia communications environment.

Program Manager: 216-987-5567

Program Admission Requirements:

- Complete VCPH 1261 with grade of "B" or higher.

Other Information:

- Submission of a portfolio.
- Portfolio reviews conducted twice per year at the end of Fall and Spring Semesters.
- Departmental approval may be granted for enrollment in individual courses for students who are not degree majors.
- Some photography courses may be available at Metropolitan Campus; completion of degree requires attendance at Western Campus.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Determine and develop photographic possibilities and solutions and produce compelling images that communicate a message through lighting, color, special techniques and subject knowledge.
2. Apply skills in camera operation, exposure and post production using Photoshop and Lightroom, color management, color calibration and proofing and output; perform digital asset management and use photographs in multi-media applications including websites, Power Point programs, FTP sites and print media.
3. Demonstrate strong work ethic and high standards of quality; apply listening, learning, and communication skills and employ interpersonal skills that display maturity and familiarity with legal and business issues of the photographic imaging field.
4. Apply knowledge of camera operation, Mac OSX, and Photoshop and Lightroom to perform onset diligence including forward thinking troubleshooting, verifying exposure histogram, checking lights and being visually alert for malfunctions.
5. Apply basic knowledge of grip, lighting and light modification tools, and demonstrate flexibility and adaptability when working in a studio and/or location environment.
6. Check, troubleshoot and pack photographic, lighting and grip equipment prior to a shoot, be alert for mechanical and environmental problems while on set and be able to respond to those problems in a professional manner.

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**VISUAL COMMUNICATION & DESIGN
(Photography) (Continued)**

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VCPH-1150	History of Photography	3
VCPH-1261	Photography I	<u>3</u>
		15
<u>Second Semester</u>		
MATH-1xxx	1000-level MATH course or higher	3
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology	
VCPH-1450	Digital Imaging I	3
VCPH-2260	Photography II	3
VCPH-2050	Commercial Studio Techniques I	<u>3</u>
		15
<u>Third Semester</u>		
VC&D-1200	Typography and Layout	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
VCPH-2450	Digital Imaging II	3
VCPH-2550	Commercial Studio Techniques II	3
VCPH-2660	Photography III	<u>3</u>
		15
<u>Fourth Semester</u>		
JMC-1310	Film Appreciation	3
SPCH-1000	Fundamentals of Interpersonal Communication ... OR	3
SPCH-1010	Fundamentals of Speech Communication ... OR	
SPCH-101H	Honors Fundamentals of Speech Communication	
VCPH-2530	Professional Practices in Photography	3
VCPH-2541	Individual Projects - Photography	3
VCPH-2760	Editorial Photography	3
VCPH-2990	Photographic Portfolio Preparation C	<u>2</u>
		17
	PROGRAM TOTAL	62

C = Capstone course.

**VISUAL COMMUNICATION & DESIGN
(Web and Interactive Media)**

Associate of Applied Business degree in Visual Communication & Design with a concentration in Web and Interactive Media

The goal of the Web & Interactive Media degree program is to prepare our graduates for a rewarding career in the growing fields of Web, Interactive Media and Game Design. The curriculum is based on the professional standards and best practices of web, media and game development companies, in-house or corporate media departments, design studios, and advertising agencies. Students are assisted in the development of studio, technical and professional skills while building a strong, marketable portfolio. The program offers coursework in a variety of media, with two distinct areas of specialization: Web Design and Construction and Game Design.

Program Admission Requirements:

- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 recommended
- Eligibility for MATH-1250 highly recommended
- Complete VC&D-1000
- Complete VC&D-1015

Other Information:

- Contact Program Coordinator for additional information.
- Non-degree students may enroll in individual courses if they meet prerequisites or with departmental approval.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply good interpersonal skills including collaboration, flexibility, adaptability, cultural diversity, stress management, coping with frustration, work ethic, willingness to learn new skills to work as an effective team member to meet the client's needs.
2. Use good listening, written, and verbal communication skills to present oneself professionally, follow directions, and interact with clients, stakeholders, and project team members.
3. Use good time management, organizational, flowcharting, business, and technical skills to manage multiple responsibilities and meet project deadlines.
4. Apply knowledge of copyright law and ethics to ensure the integrity of project for the client.
5. Tell a story using appropriate digital media, principles of design, color, typography, motion, sound and timing to create an emotional response that supports the client's message.
6. Gather and assess information relevant to the project/design challenge; research and legally acquire necessary source content.
7. Evaluate situations, challenges, and processes for business and create a plan for appropriate solutions.
8. Present ideas and strategies to clients and co-workers that clarify the proposed visual story, plan of execution and measureable outcome.

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Program Sequences

VISUAL COMMUNICATION & DESIGN (Web and Interactive Media) (Continued)

9. Develop a fundamental knowledge of industry standard tools and best practices for visual and analytical media development.
10. Measure and analyze outcomes of projects and campaigns.

Suggested Semester Sequence

<u>First Semester</u>	<u>Credits</u>
ENG-1010 College Composition I	3
MATH-1250 Contemporary Mathematics or higher	4
VC&D-1000 Visual Communication Foundation	3
VC&D-1015 Digital Studio Basics	3
VCIM-1570 Web Publishing I: HTML (a)... OR	3
VCIM-1200 Game Design I: Introduction to Game Design (b)...	-
	16
<u>Second Semester</u>	<u>Credits</u>
VC&D-1200 Typography and Layout	3
VC&D-1430 2D Design	3
VCIL-1640 3D Design	3
VCIM-1770 Web Publishing II: Site Theory & Construction (a) ... OR	3
VCIM-1400 Game Design II: Game Engines (b)	3
VCIM-1970 Midpoint Portfolio Review	1
Communication...(See AAB Degree requirements)	3
	16
<u>Third Semester</u>	<u>Credits</u>
VC&D-2530 Professional Practice in Visual Communication and Design	3
VCIM-2280 Web Publishing III: Media Rich Websites (a)... OR	3
VCIM-2200 Game Design III: Game Design Studio (b)	3
VCIM-2270 Animation for the Web and Media	3
VCIM-2371 Interactive Media I	3
Arts & Hum (see AAB/AAS degree requirements)	3
	15
<u>Fourth Semester</u>	<u>Credits</u>
VCIM-2290 Web Publishing IV: Data Driven Sites ... OR	3
VCIM-2380 Interactive Media II: App Design ... OR	3
IT-2400 Unity Game Programming	3
VCIM-2071 Service-Learning Web and Interactive Studio ... OR	3
VCIM-2940 Field Experience ... OR	3
VC&D-2830 Cooperative Field Experience	3
VC&D-2991 Portfolio Preparation C	3
VCXX-xxxx Visual Communication & Design elective	3
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)	3
	15
PROGRAM TOTAL	62

C = Capstone course.

OPTIONS

(a) Technical Electives for Web Design & Construction

<u>Specialist</u>	<u>Credits</u>
Web Design & Construction Specialist: Helps students to develop advanced web design & construction skills.	
VCIM 1570 Web Publishing I: HTML	3
VCIM 1770 Web Publishing II: Site Theory & Construction	3
VCIM 2280 Web Publishing III: Media Rich Websites	3
	62 - 65

(b) Technical Electives for Game Designer

<u>Game Designer</u>	<u>Credits</u>
Game Designer: Helps students learn fundamentals of 2D and 3D Game Design for various platforms including console, computer and mobile devices.	
VCIM 1200 Game Design I: Introduction to Game Design	3
VCIM 1400 Game Design II: Game Engines	3
VCIM 2200 Game Design III: Game Design Studio	3
	62 - 65

ELECTIVES

Game Design

<u>Game Design</u>	<u>Credits</u>
The following courses are recommended electives for students pursuing Game Design. Courses cannot be used for both a requirement and elective (in the case of an "or" selection in the semester sequence).	
IT 2400 Unity Game Programming	3
VC&D 2701 Media Design	3
VCIL 2040 3D Motion	3
VCIM 1570 Web Publishing I: HTML	3
VCIM 1770 Web Publishing II: Site Theory & Construction	3
VCIM 2380 Interactive Media II: App Design	3
VCIM 2571 Interactive Media Studio	3
VCIM 2800 Special Advanced Topics in Web & Interactive Media	3

Web Design & Construction & Game Design

<u>Web Design & Construction & Game Design</u>	<u>Credits</u>
The following courses are recommended electives for students pursuing Web Design & Construction. Courses cannot be used for both a requirement and elective (in the case of an "or" selection in the semester sequence).	
VC&D 2701 Media Design	3
VCDV 1180 Introduction to Digital Video and Digital Filmmaking	3
VCIL 2040 3D Motion	3
VCIM 1200 Game Design I: Introduction to Game Design	3
VCIM 1400 Game Design II: Game Engines	3
VCIM 2290 Web Publishing IV: Data Driven Sites ¹	3
VCIM 2380 Interactive Media II: App Design ¹	3
VCIM 2571 Interactive Media Studio	3
VCIM 2800 Special Advanced Topics in Web & Interactive Media	3
VCPH 1261 Photography I	3
	6

GAME DESIGN

Short-Term Certificate

The Game Design certificate provides students with a foundation focusing on the fundamentals of 2D and 3D Game Design for various platforms including console, computer and mobile devices. Completion of this certificate will provide students with applied experience utilizing industry standard tools and techniques to develop Games for a broad audience.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply effective verbal, written and visual communication skills to present a game concept to potential clients and other designers.
2. Work independently and as a member of a design team to create a game within a time and defined parameters.
3. Use theories of game design to create an interactive experience and framework around a theme for a targeted/chosen audience.
4. Plan, design and build assets, mechanics and rules to assemble a playable prototype.
5. Develop, refine and evaluate the game with the appropriate digital or analog tools to produce the final product for a chosen gaming platform.
6. Deploy the game through appropriate channels.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIL-2040	3D Motion	3
VCIM-1200	Game Design I: Introduction to Game Design	3
VCIM-1400	Game Design II: Game Engines	3
		15
<u>Second Semester</u>		<u>Credits</u>
VC&D-2991	Portfolio Preparation ... OR	3
VCIL-2540	3D Studio ... OR	
VCIM-2571	Interactive Media Studio	
VCIM-2200	Game Design III: Game Design Studio	3
VCIM-2270	Animation for the Web and Media	3
VCIM-2371	Interactive Media I ... OR	3
IT-2400	Unity Game Programming	-
		12
	PROGRAM TOTAL	27

WEB DESIGN & DEVELOPMENT

Certificate of Proficiency

The goal of the Certificate of Proficiency in Web Design Development is to prepare candidates for a rewarding career in this expanding field. The curriculum is based on web standards and best practices of web design development companies, as well as in-house or corporate web teams. Learners are assisted in the development of technical, design and professional skills while building a strong, marketable portfolio. The certificate offers in depth coursework in a broad range of web related skills, from coding to user experience. This sequence is especially beneficial for those who already hold a degree in a related field but wish to update or add web design development to their skillset. Learners who wish to apply these courses to obtain an Associate of Applied Business degree in Visual Communication and Design with a concentration in Web and Interactive Media, may do so seamlessly.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 recommended
- Eligibility for MATH-1060 or higher highly recommended
- Complete VC&D-1000
- Complete VC&D-1015

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize interviews, surveys, questionnaires and general research to assess client and end users needs. Identify possible technical and organizational solutions to meet desired outcomes.
2. Build wireframes, flowcharts, lists, navigational structure and visual designs per research and client consensus.
3. Construct websites per specifications, conduct usability and technical testing, make corrections and adjustments as needed and deploy. Measure and analyze post-execution outcomes.
4. Develop essential interpersonal skills including collaboration, adaptability, presenting ideas and understanding cultural diversity. Practice maintaining a good attitude, balancing multiple deadlines, work ethic, listening, written, and verbal communication skills. Utilize knowledge of copyright law and ethics to ensure the integrity of project. Plan for ongoing professional development.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VCIM-1570	Web Publishing I: HTML	3
VCIM-1770	Web Publishing II: Site Theory & Construction	3
VCIM-2270	Animation for the Web and Media ... OR	3
VC&D-1430	2D Design	-
		15
<u>Second Semester</u>		<u>Credits</u>
VC&D-1200	Typography and Layout	3
VC&D-2701	Media Design	3
VCIM-2071	Service-Learning Web and Interactive Studio ... OR	3
VC&D-2991	Portfolio Preparation	
VCIM-2280	Web Publishing III: Media Rich Websites	3
VCIM-2290	Web Publishing IV: Data Driven Sites	3
		15
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Course Descriptions

Course Numbering

To simplify the task of maintaining accurate and complete academic records for all students at the College, an alpha-numeric code is used to identify all courses. In this code, the alpha characters indicate the subject area. For example, World Regional Geography carries the course number GEOG-1010. The letters GEOG refer to the subject area, Geography. The number 1010 has been assigned to a specific course, World Regional Geography, within that subject area.

Subject areas are listed in alphabetical order by subject title, not by the course code. Courses are listed in numerical order within each subject area. The semester course numbering system defines the type of course it is. Courses numbered 09xx generally are designed to provide students with basic skills necessary for freshman studies. ENG-0980, for example, is Language Fundamentals I. Courses that begin with the number "1xxx" normally represent freshman-level courses. Courses that begin with the number "2xxx" are usually sophomore-level courses. The numbering scheme for the semester system courses may be found in Appendix IV.

Modular courses may be offered in some subject areas. A modular course is a component of an approved semester course and is identified with a final letter of A, B, C, D or E. The course content of a modular course must be contained in the original course.

A special topics course permits the teaching of a variety of topics not currently contained in its subject area. An "18xx" numbered course indicates a freshmen-level special topics course; a "28xx" is assigned to a sophomore-level course. The beginning of the Course Description section lists course descriptions for Special Topics courses, Independent Study/Research courses, and Cooperative Education courses. These courses have a generic course description and thus are not repeated in their subject area.

Honors courses are also discussed at the beginning of the Course Description section. Some standard courses have an equivalent honors course that may replace the standard course if the student meets the honors program requirements. Course descriptions for honors courses are listed within their subject area. A listing of current available honors courses may be found in the Equivalent Courses list which is located in Appendix V.

Course numbers do not indicate whether or not a course will be accepted for transfer to other institutions. Students are

advised to consult with their counselors regarding transfer of courses and credits to other institutions.

Credits

The number of semester credits for each course described in the Catalog is indicated after the course title. For example, three credits are indicated as 03 Semester Credits. The number of credits for a course does not necessarily equal the number of hours that the course meets in one week.

Prerequisites

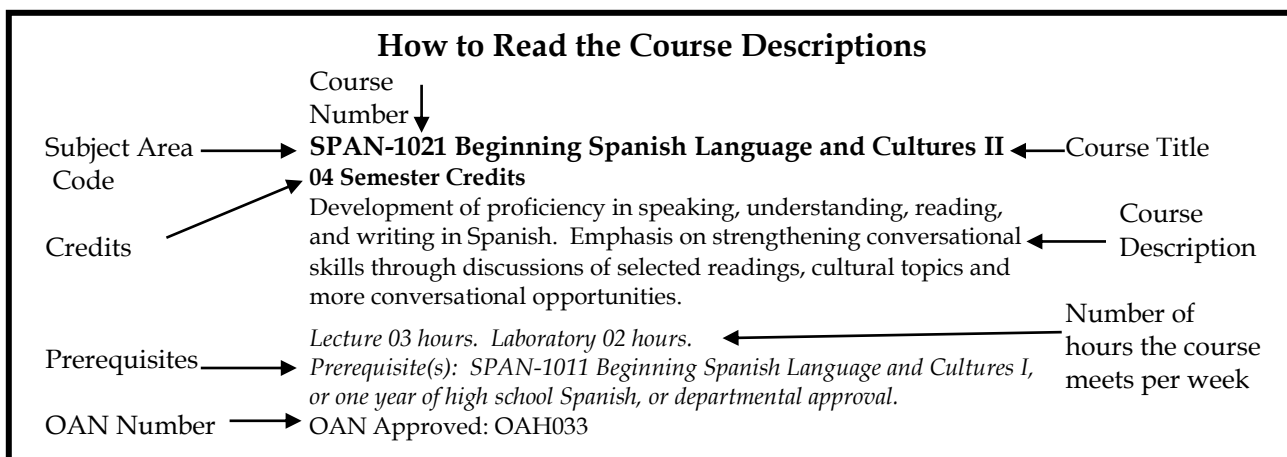
Prerequisites, if any, are listed at the end of each course description. Prerequisites are established by each department, for each course in that department, to ensure that the student has an adequate and sufficient background to enroll in the course and achieve success. Students must have completed the prerequisite course with a grade of "C" or higher to meet the prerequisite requirement. It is the student's responsibility to ensure that he or she has met the prerequisites for any course in which he or she enrolls. PREREQUISITES WILL BE CHECKED BY THE COMPUTER AT THE TIME OF REGISTRATION. If the student is unsure that the prerequisite has been met, he or she should consult with the department PRIOR to registering for that course.

Ohio Articulation Number (OAN)

Number assigned by the State of Ohio to denote that course has been accepted as part of a specific state-wide Transfer Assurance Guide (TAG).

Schedule of Classes

Courses described in this Catalog are those approved by the Cuyahoga Community College Board of Trustees at the time of publication. Inclusion of a course description does not obligate the College to offer the course in any given semester or academic year. A Credit Schedule of classes is published each semester prior to the registration period. The schedule of classes contains a list of classes to be offered and general registration information. Courses approved by the Board of Trustees after the publication of this Catalog are reflected in the Credit Schedule of classes.



<u>Subject Areas</u>	<u>Subject Code</u>		
Accounting	ACCT	Humanities	HUM
Administrative Office Systems	AOS	Information Technology	IT
American Sign Language	ASL	Networking Software	ITNT
Anthropology	ANTH	Programming and Development	ITMP/ITWM
Applied Industrial Technology	AIT	Integrated Systems Engineering Technology	ISET
Bricklaying & Allied Crafts	ATBL	Interior Design	INTD
Carpentry	ATCT	Italian	ITAL
Cement Masonry	ATCM	Japanese	JAPN
Communication Transport Systems	ATCW	Journalism and Mass Communication	JMC
Construction Tending and Hazardous	ATLB	Marketing	MARK
Material Abatement		Massage Therapy	MT
Drywall Finishing	ATDW	Mathematics	MATH
Electrical Construction	ATEL	Manufacturing Industrial Engineering Technology	MET
Floorlaying	ATFL	Mechanical Engineering Technology	MET
Glazing	ATGL	Media Arts and Studies	MARS
Ironworking	ATIW	Medical Assisting	MA
Manufacturing Technology	ATMT	Medical Laboratory Technology	MLT
Millwrighting	ATMW	Music	MUS
Operating Engineers	ATOE	Nuclear Medicine	NMED
Painting	ATPT	Nursing	NURS
Pile Driving	ATPD	Occupational Therapy Assistant Technology	OTAT
Pipefitting	ATPF	Optical Technology	OPT
Plumbing	ATPL	Paralegal Studies	PL
Sheet Metal Working	ATSM	Pharmacy Technology	PHM
Sign and Display	ATSD	Philosophy	PHIL
Teledata	ATTC	Physical Education	PE
Art	ART	Physical Science	PSCI
Automotive Technology	AUTO	Physical Therapist Assisting Technology	PTAT
Biology	BIO	Physician Assistant	PA
Business Administration	BADM	Physics	PHYS
Chemistry	CHEM	Plant Science and Landscape Technology	PST
Chinese	CHIN	Political Science	POL
Captioning and Court Reporting	C&CR	Practical Nursing	PNUR
Construction Engineering Technology	CNST	Psychology	PSY
Criminal Justice	CJ	Radiography	RADT
Dance	DANC	Recording Arts and Technology	RAT
Deaf Interpretive Services	DIS	Religious Studies	REL
Dental Assisting	DAST	Respiratory Care	RESP
Dental Hygiene	DENT	Russian	RUSS
Diagnostic Medical Sonography	DMS	Sociology	SOC
Dietetic Technology	DIET	Spanish	SPAN
Early Childhood Education	ECED	Sport and Exercise Studies	SES
Earth Science	ESCI	Speech Communication	SPCH
Economics	ECON	Surgical Technology	SURT
Education	EDUC	Theatre Arts	THEA
Electrical/Electronic Engineering Technology	EET	Urban Studies	UST
Electroneurodiagnostic	END	Veterinary Technology	VT
Emergency Medical Technology	EMT	Visual Communication and Design	VC&D
English	ENG	Digital Video and Digital Filmmaking	VCDV
English as a Second Language	ESL	Graphic Design	VCGD
Environmental, Health & Safety Technology	EHST	Illustration	VCIL
Financial Management	FIN	Web and Interactive Media	VCIM
Fire Technology	FIRE	Photography	VCPH
French	FREN	Women's Studies	WST
General Studies	GEN		
Geography	GEOG		
German	GER		
Health	HLTH		
Health Information Management	HIM		
Health Technologies	HTEC		
History	HIST		
Hospitality Management	HOSP		
Human Services	HS		

Course Descriptions

The College offers a variety of courses in each discipline which carry a common description. The course descriptions are listed below. Students should see the current semester Credit Schedule of classes for specific semester offerings.

SPECIAL TOPICS

xxxx-1800 - 1819 Special Topics in (subject area name)

01-03 Semester Credits

Study of selected topics or current issues in *(subject area name)*. Provides student an opportunity to explore various topics in greater detail (see Credit Schedule of classes for current offerings). Repeatable for different topics. No more than six credits of special topics may be applied toward elective and/or program graduation degree requirements.

Lecture 01-03 hours. Laboratory 02-09 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

xxxx-2800 - 2819 Special Advanced Topics in (subject area name)

01-03 Semester Credits

Study of selected advanced topics or current issues in *(subject area name)*. Provides student an opportunity to explore various topics in greater detail (see Credit Schedule of classes for current offerings). Repeatable for different topics. No more than six credits of special topics courses may be applied toward elective and/or program graduation degree requirements.

Lecture 01-03 hours. Laboratory 02-09 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

INDEPENDENT STUDY/RESEARCH

xxxx-1820 Independent Study/Research in (subject area name)

01-03 Semester Credits

Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

Lecture 01-03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

xxxx-182S Independent Laboratory Study/Research in (subject area name)

01-03 Semester Credits

Independent two-hour lab per credit. Directed individual study. Study/research title and specific content arranged between instructor and student (see

Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.
Lecture 00 hours. Laboratory 02-06 hours
Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

Available in some disciplines.

xxxx-182T Independent Laboratory Study/Research in (subject area name)

01-03 Semester Credits

Independent three-hour lab per credit. Directed individual study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

Lecture 00 hours. Laboratory 03-09 hours.

Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

Available in some disciplines.

xxxx-2820 Independent Advanced Study/Research in (subject area name)

01-03 Semester Credits

Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings). May be repeated for a maximum of six credits of different topics.

Lecture 01-03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

xxxx-282S Independent Advanced Laboratory Study/Research in (subject area name)

01-03 Semester Credits

Independent two-hour lab per credit. Directed individual advanced study. Study/research title and specific content arranged between instructor and student (see Credit Schedule of classes for current offerings).

May be repeated for a maximum of six credits of different topics.

Lecture 00 hours. Laboratory 2-6 hours.

Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

Available in some disciplines.

xxxx-282T Independent Advanced Laboratory Study/Research in (subject area name)

01-03 Semester Credits

Independent three-hour lab per credit. Directed individual advanced study. Study/research title and specific content arranged between instructor and student

(see current Credit Schedule of classes for semester offerings). May be repeated for a maximum of six credits of different topics.

Lecture 00 hours. Laboratory 03-09 hours.

Prerequisite(s): Departmental approval, and instructor approval, and eligibility for ENG-1010 College Composition I.

Available in some disciplines.

COOPERATIVE EDUCATION

xxxx-2830 Cooperative Field Experience 01-03 Semester Credits

Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): See campus CO-OP Advisor for the Cooperative Education Program application.

Available in some disciplines (see current Credit Schedule of classes for semester offerings).

HONORS COURSES

Honors courses at Cuyahoga Community College are based upon a commitment to college, a commitment to scholarship and a commitment to community.

Interested students of high academic potential who wish to join specially selected faculty in a partnership dedicated to learning and personal growth should consider taking Honors courses. Students enrolled in Honors courses can expect university parallel curriculum, strong faculty mentoring relationships and contractual-independent learning opportunities.

These students may also be eligible to join the Honors Program, which offers honors scholarships and a variety of cultural, community and academic activities, and the Phi Theta Kappa Honor Society, which provides opportunities for development of leadership, service and scholarship. Both of these organizations offer a variety of activities that complement class work and form an important extra- and co-curricular component of an honors education.

Besides regular Honors courses, a one-hour Honors Contract (179H/279H) is available as an addition to almost any honors or non-honors class with the approval of the instructor. Honors courses are open to both new and current students. Honors courses normally end with an "H" in the fourth position of the course number.

For information about admission to Honors courses, contact the Counseling Department or the Campus Honors Coordinator. For more information about Phi Theta Kappa, visit <http://www.tri-c.edu/programs/honors/Pages/PhiThetaKappa.aspx>. For more information about the Tri-C Honors Program, visit the Honors Website at www.tri-c.edu/honors.

xxxx-179H Honors Contract 01 Semester Credit

Honors Contract complements and exceeds requirements and expected outcomes for an existing 1000-level honors course through formulation of a contract with a faculty mentor. This independent study at the honors level may also be taken with a non-honors course. When taken with a non-honors course the Honors Contract adds an honor experience to that course. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. The student is required to meet on a regularly scheduled basis with the instructor for mentor-student tutorial sessions. A maximum of six Honor Contracts (six credit hours) may be taken at the College (includes 179H and 279H).

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: 00.

Prerequisite(s): Must be taken concurrently with a 1000-level course whose instructor agrees to mentor the student in this contract. Departmental approval required.

Available in some disciplines (see current Credit Schedule of classes for semester offerings).

xxxx-279H Sophomore (Second Year) Honors Contract

01 Semester Credit

Sophomore Honors Contract in (subject area) complements and exceeds requirements and expected outcomes for an existing [subject area] 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: 00.

Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in (subject area), whose instructor agrees to mentor the student in the sophomore honors contract. Departmental approval required.

Available in some disciplines (see current Credit Schedule of classes for semester offerings).

xxxx-182H Honors Independent Study 01-03 Semester Credits

Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture 01-03 hours. Laboratory 00 hours.

Other Required Hours: 00.

Prerequisite(s): Departmental approval and instructor approval, and eligibility for ENG-1010 College Composition I or eligibility for ENG-101H Honors College Composition I, and must have earned an A or B in at least 3 honors courses.

xxxx-282H Honors Independent Study 01-03 Semester Credits

Advanced Honors-level directed individual study. Must meet criteria set forth in the Honors Course Checklist used to approve regular honors courses. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

Lecture 01-03 hours. Laboratory 00 hours.

Other Required Hours: 00.

Prerequisite(s): Departmental approval and instructor approval, and eligibility for ENG-1010 College Composition I or eligibility for ENG-101H Honors College Composition I, and must have earned an A or B in at least 3 honors courses.

xxxx-180H Honors Special Topics in (subject area name)

Honors study of selected topics or current issues in (subject area name). Provides student an opportunity to explore various topics in greater detail (see Credit Schedule of classes for current offerings). Repeatable for different topics. No more than six credits of special topics may be applied toward elective and/or program graduation degree requirements.

Prerequisite(s): Departmental approval: Member of the Honors Program; successfully completed a minimum of one Honors course (3 or more credit hours) with a grade of A or B.

xxxx-280H Honors Special Advanced Topics in (subject area name)

Honors study of selected advanced topics or current issues in (subject area name). Provides student an opportunity to explore various topics in greater detail (see Credit Schedule of classes for current offerings). Repeatable for different topics. No more than six credits of special topics may be applied toward elective and/or program graduation degree requirements.

Prerequisite(s): Departmental approval: Member of the Honors Program; successfully completed a minimum of two Honors courses (6 or more credit hours) with a grade of A or B.

APPLIED MUSIC COURSE ENROLLMENT

Cuyahoga Community College offers students the opportunity to study a particular musical instrument or vocal music in an intensive class setting for credit. Before registering for any of the Applied Music courses, students must contact the Applied Music Coordinator at the campus of enrollment:

Metropolitan Campus: 216-987-4256

Eastern Campus: 216-987-2210

Western Campus: 216-987-5532

All students are eligible to take the basic Applied Music courses, MUS 1290 or MUS 2290. If the student plans to enroll in the Music Major courses (MUS 1460, MUS 1470, MUS 2460, or MUS 2470), an audition performed for the coordinator and applied faculty in the particular musical instrument may be required.

Students enrolled in Applied Music are required to pay a non-refundable private lesson fee each semester in addition to the credit hour cost, (\$150.00 for half-hour lessons, and \$300.00 for hour lessons).

Applied Music courses at Cuyahoga Community College are private, one-on-one lessons with College Music Faculty. Students will have 16 weekly lessons or 15 weekly lessons and one jury, upon the recommendation of the individual instructor. The College absence policy will be followed in this program.

A one-credit Applied Music course requires a minimum of 7 hours of rehearsal/practice outside of lessons per week. A two-credit Applied Music course requires a minimum of 14 hours of rehearsal/practice per week. Individual instructors may decide how to monitor this requirement.

A jury is required each semester for students enrolled in the music major classes: MUS 1460, MUS 1470, MUS 2460, and MUS 2470. Students' progress through these courses shall be judged at the end of each term of enrollment, and faculty will make recommendations about the students' placement. Faculty approval and a grade of "C" or higher are required to move onto the next level of study.

ACCOUNTING - ACCT

ACCT-1011 Business Math Applications

03 Semester Credits

Application of applied quantitative procedures to typical accounting, financial, and business situations. Includes percents in business, simple and compound interest, financing, property and sales taxes, applied statistics, present and future values, and other accounting/business topics. Required use of financial (business analyst) calculator and available internet resources in problem-solving.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-0950 Beginning Algebra I.

ACCT-1020 Applied Accounting

03 Semester Credits

Fundamentals of accounting procedures as used in a double-entry bookkeeping system. Emphasis on application of techniques and procedures to record financial information in an accounting system and to generate financial statements. Introduction to use of commercial general ledger software in recording business transactions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

ACCT-1030 Payroll

03 Semester Credits

Detailed study of payroll, record-keeping regulations, reporting requirements, accounting procedures and federal labor laws. Computations of gross wages, salaries, mandatory deductions of federal, state and local taxes, and optional deductions. Covers employer's related taxes and preparation of various payroll tax forms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1310 Financial Accounting, or departmental approval: equivalent coursework or experience.

ACCT-1041 Individual Taxation

04 Semester Credits

Individual income taxes with concentration at federal level. History, assumptions and objectives of federal income tax law. Determination of filing status, exemptions, inclusions, exclusions, adjustments, deductions, credits, tax liability and reporting requirements. Completions of tax returns, tax planning and introduction to federal tax research. Use of commercial tax-preparation software. Determination of sole proprietorship income and taxes thereon.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1310 Financial Accounting, or departmental approval.

ACCT-1310 Financial Accounting

04 Semester Credits

Introduction to methodology and logic of accounting procedures, principles, and standards used in preparing financial information for external users. Emphasis on measuring, describing, recording, interpreting, and analyzing economic activities within for-profit business entities.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-1250 Contemporary Mathematics.

OAN Approved: OBU001

ACCT-1340 Managerial Accounting

04 Semester Credits

Theory and practice of accounting procedures used by management to plan operations, control activities, and make sound business decisions. Create and interpret budgets, standard cost systems, breakeven analysis, activity based costing (ABC) and job costing systems. Discuss other tools necessary to effectively manage companies.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1310 Financial Accounting, or departmental approval.

OAN Approved: OBU002

ACCT-2041 Business Taxation

04 Semester Credits

Concentration on corporate federal income taxes and taxation of partnership income. Preparation of various tax forms including 1120, 1120S, and 1065 and related schedules. Payroll taxes, sales and use tax, personal property taxes, franchise taxes, and other taxes related to business.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1041 Individual Taxation, or departmental approval: equivalent coursework or experience.

ACCT-2050 Volunteer Income Tax Assistance

02 Semester Credits

Train in the basics of individual taxation for federal, Ohio and local tax compliance as well as in the use of professional level tax preparation software. Students must successfully pass Ethics, Part A - Basic, and Parts B - Intermediate of the Volunteer Income Tax Assistance (VITA) Exam provided by the Internal Revenue Service in order to qualify as a volunteer tax preparer at a VITA Tax Clinic.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Recommend completing ACCT-1041 Individual Taxation prior to enrolling in this course.

ACCT-2310 Intermediate Accounting I

04 Semester Credits

Focuses on increasing understanding and application of accounting theory and the underlying financial accounting principles, procedures and reporting requirements used primarily in the for-profit sector. Topics include: financial reporting, accounting cycle, financial statement analyses, business segment and interim reports, income statement, receivables, cash cycle, asset valuation, liabilities, and earnings management.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1310 Financial Accounting, and MATH-1250 Contemporary Mathematics, or departmental approval: equivalent course work or experience. Recommend IT-1010 Introduction to Microcomputer Applications for students who are not already proficient in Microsoft Excel, Word, and PowerPoint.

ACCT-2320 Intermediate Accounting II

04 Semester Credits

Continuation of Intermediate Accounting I. Emphasis on analysis, methods of valuation and statement presentation of current and long-term liabilities, including leases and pensions, corporate equity in both simple and complex structures, including earnings per share computations; income tax accounting; error correction and financial statement analysis.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-2310 Intermediate Accounting I and recommend IT-1010 Introduction to Microcomputer Applications for students who are not already proficient in Microsoft Excel, Word, and PowerPoint.

ACCT-2340 Cost Accounting

04 Semester Credits

Theory and practice of cost accounting as applied to management of manufacturing, retail, and service industries. Emphasis on advanced terminology, job and process costing schedules, budgeting and variances, joint costing, pricing decisions, and capital budgeting. Application of Cost-Volume-Profit (CVP) models, the Equivalent Units (EOQ) model, Just-in-time (JIT) and other analytical tools used by management in the decision-making process.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1340 Managerial Accounting or departmental approval: equivalent coursework or experience.

ACCT-2500 Governmental/Non-Profit Accounting

04 Semester Credits

Accounting principles, standards and procedures for government entities and non-profit service entities, including school systems, colleges and universities, hospitals, charitable and religious organizations, and fraternal organizations. Application of current Financial Accounting Standards Board (FASB) and Government

Accounting Standards Board (GASB) standards. Modular courses.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1020 Applied Accounting, or ACCT-1310 Financial Accounting, or departmental approval: equivalent coursework or experience.

ACCT-2510 Auditing

04 Semester Credits

Audit regulatory environment, approach, planning, and procedures; compliance and substantive testing; treatment of audit adjustments, subsequent events, and discovered irregularities; preparing various audit worksheets and final product, the auditor's report.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1340 Managerial Accounting and FIN-2100 Financial Management.

ACCT-2520 QuickBooks Immersion

02 Semester Credits

Fundamentals of accounting procedures as used in a double-entry bookkeeping system. Emphasis is on application of techniques and procedures to record financial information in an accounting system and to customize and generate financial statements for a small business. Introduction to commonly used commercial general ledger software in recording business transactions and preparing business documents and reports.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1020 Applied Accounting, or ACCT-1310 Financial Accounting, or departmental approval.

ACCT-2830 Cooperative Field Experience

01-03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

ACCT-2995 Accounting Technology**03 Semester Credits**

Capstone course in Accounting. Integrates business and accounting core curriculum and application of accounting concepts requiring critical thinking and teamwork skills. Builds on students' existing technology skills and utilizes various applications to research, present and support financial management decision making and reporting. Spreadsheet, data management, accounting software applications, tax and other research concepts.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ACCT-1041 Individual Taxation and FIN-2100 Financial Management and departmental approval: completion of a 2000 level accounting (ACCT) course with a "C" or better grade. This course should be taken in the last semester of a student's tenure with the college.

ADMINISTRATIVE OFFICE SYSTEMS - AOS
AOS-1201 Word Processing I**04 Semester Credits**

Basic and intermediate techniques and skills using word processing software applied to practical business applications. Introduction to and formatting of a variety of documents will be taught. Professionalism and soft skills emphasized (e.g. punctuality, getting along with others, etc.)

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1000 Keyboarding or departmental approval: equivalent proficiency.

AOS-1220 Speed Building**02 Semester Credits**

For individuals with ability to type by touch. Focuses on improving speed and accuracy in keyboarding at the microcomputer. May be repeated; only 2 credits may be applied to degree requirements.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): IT-1000 Keyboarding or departmental approval.

AOS-1241 Records Management**03 Semester Credits**

Fundamentals of records, including basic rules for filing, five basic methods, and records handling from creation to destruction or archival storage. Study of electronic office filing, micrographics, electronic media, and optical storage. Applications on microcomputer.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications.

AOS-1250 Electronic Spreadsheet Use and Design**03 Semester Credits**

Study of electronic spreadsheet concepts and software applications as used in a business environment. Spreadsheet theory, design, manipulation, and implementation techniques. Hands-on applications, case studies, and problem-solving strategies using spreadsheet software for accurate and timely storage, retrieval, manipulation, and interpretation of data.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or departmental approval: comparable knowledge or skills.

AOS-2200 Word Processing II**03 Semester Credits**

Study and application of advanced text editing features of word processing software as applied to complex business documents. Includes document assembly, advanced merge techniques, sort, forms, complex tables and columns, math functions, styles, outlines, templates, macros, graphics, and web applications.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): AOS-1201 Word Processing I, or departmental approval: equivalent proficiency.

AOS-2210 Presentation Software**03 Semester Credits**

Comprehensive instruction in the major features of presentation software. Students learn to create professional-quality slide presentations. Instruction in design strategy-importing and creating graphics; sound-creating, editing, playing and downloading from the Internet; and video-capturing, playing, and editing video.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or departmental approval: comparable knowledge or skills.

AOS-2250 Virtual Assistant/Virtual Cyber Office**03 Semester Credits**

Explore concepts and issues to learn how to establish and successfully develop a virtual assistant business including how to locate customers, set fees, and develop client contracts. Students will also use integrated applications software to complete tasks and projects.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications or departmental approval.

AOS-2270 Desktop Publishing

03 Semester Credits

Hands-on applications using desktop publishing software package. Application of desktop publishing techniques and design concepts, applied to a variety of business publications. Course assumes prior word processing experience/knowledge.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): AOS-1201 Word Processing I, or departmental approval: equivalent proficiency.

AOS-2370 Office Meeting and Events Coordination

03 Semester Credits

Presents sound principles and practices for office professionals and public relations practitioners who coordinate events, meetings, conferences, or conventions. Students will complete assignments, activities, and projects utilizing "current" integrated office suite applications software such as Microsoft Office 2007.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, and AOS-2210 Presentation Software, and AOS-2270 Desktop Publishing, or concurrent enrollment; and AOS-2990 Office Procedures and Practices or concurrent enrollment.

AOS-2400 Virtual Portfolio Project

03 Semester Credits

This course requires students to write a business plan for creating a virtual office; plan, design, create and publish a Virtual Assistant website. Students will also develop a marketing strategy and promotional materials for the virtual office. Upon completion, students will have prepared a professional portfolio.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications and AOS-2210 Presentation Software and AOS-2270 Desktop Publishing.

AOS-2410 Office Management

03 Semester Credits

Basic principles of office organization and management. Emphasis on problem-solving and communications necessary to administer office functions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1020 Introduction to Business.

AOS-2600 Voice Recognition Technology

02 Semester Credits

Presents an overview of current technology, getting started using the technology, learning the basics, making speech recognition part of the computer routine, and using speech recognition and digital input tools routinely as communication tools.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): AOS-1201 Word Processing I, or departmental approval: equivalent proficiency.

AOS-2830 Cooperative Field Experience

01-03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

AOS-2990 Office Procedures and Practices

03 Semester Credits

Designed to update knowledge of rapidly changing office environment and preparation for initial employment as well as promotion to supervisory and administrative positions.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): AOS-1201 Word Processing I and IT-1010 Introduction to Microcomputer Applications and AOS-2410 Office Management; or departmental approval .

AMERICAN SIGN LANGUAGE - ASL

ASL-1001 Fingerspelling

02 Semester Credits

Elementary proficiency of the manual alphabet and numbers of Fingerspelling ASL in conversational settings, with emphasis on fingerspelled words used as signs in ASL (loan signs) and acronyms, clubs and organizations related to the Deaf community. Emphasizes accuracy, clarity, speed, and rhythm in application of comprehension and production skills.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

ASL-1010 Beginning American Sign Language I

04 Semester Credits

First in two-course sequence. Introduction to American Sign Language (ASL) and its history with emphasis on basic communication skills, focusing on principles of ASL grammar, body language, and facial expressions. Practice in expressive and receptive skills.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

**ASL-1020 Beginning American Sign Language II
04 Semester Credits**

Second in two-course sequence. Focuses on enhancing American Sign Language vocabulary. Daily practice in expressive and receptive skills in paragraph form. Introduction to conversational skills along with verb and adjective inflection. Introduction of various aspects of Deaf culture and common occurrences in the daily lives of people who are deaf.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ASL-1010 Beginning American Sign Language I, or departmental approval.

**ASL-1100 Deaf Culture
03 Semester Credits**

Cultural differences and similarities between the hearing and Deaf communities. History of ASL, deafness and its causes. Deaf education, ADA laws, and special devices utilized by people who are deaf. Examine selected vocabulary and facial expressions and learn their relevance to Deaf culture. One visit outside classroom may be required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

**ASL-2010 Intermediate American Sign Language I
04 Semester Credits**

First in two-course sequence. Focuses on signs, body language, and facial expressions with emphasis on more complex conversational situations. Practice at intermediate level. Visitation outside the classroom is required.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ASL-1020 Beginning American Sign Language II, or departmental approval.

**ASL-2020 Intermediate American Sign Language II
04 Semester Credits**

Second in two-course sequence. Integrates facial expressions, body language, and ASL vocabulary at an increasingly complex level. Practice receptive skills in dialogue mode. Keep current in the field of deafness and interpreting by reading articles from various sources. Students participate in activities outside the classroom with persons who are deaf.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ASL-2010 Intermediate American Sign Language I, or departmental approval.

**ASL-2411 Advanced American Sign Language
04 Semester Credits**

Study of particular dialogues and drills, both from text and original work. Practice at advanced level, receptively and expressively. Visitation outside the classroom may be required.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ASL-1100 Deaf Culture, and ASL-2020

Intermediate American Sign Language II, and DIS-1402

American Sign Language Linguistics; or departmental approval.

ANTHROPOLOGY - ANTH

**ANTH-1010 Cultural Anthropology
03 Semester Credits**

Introduction to cultural study of human societies. Examples from various cultures within the United States and around the world used to provide understanding of cultural differences and similarities. Will relate current findings, perspectives and methods used by anthropologists in all fields.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OSS001

**ANTH-1030 Archaeology
03 Semester Credits**

Investigation of the past through current methods and perspectives of archaeology. Presentation of significant archaeological findings and interpretation from selected parts of the world.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OSS003

**ANTH-1210 Human Evolution
04 Semester Credits**

Survey of the human evolutionary past. Biological Anthropology course that focuses upon evolutionary theory and principles, archaeology, living primates, the fossil record, human ancestors, and modern human variation.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I; or departmental approval.

ANTH-179H Honors Contract in Anthropology
01 Semester Credit

Honors Contract complements and exceeds the requirements and objectives for an existing Anthropology 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion, will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of six credits of different topics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Anthropology, whose instructor approves the Honors Contract.

ANTH-2010 Peoples and Cultures of the World
03 Semester Credits

Cross cultural understanding of universal human concerns and issues affecting particular regions and cultures, using a variety of anthropological perspectives and theories. Emphasis on concerns of non-Western peoples and cultures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ANTH-1010 Cultural Anthropology, or SOC-1010 Introductory Sociology, or departmental approval.

ANTH-2030 Archaeological Field Methods
04 Semester Credits

Overview of methods used in field archaeology as applied to actual archaeological sites. Students receive training and experience in surveying, mapping, excavation, artifact processing and data analysis. Requires on-site student participation in the field. (See course schedule bulletin for specific requirements.)

Lecture 01-03 hours. Laboratory 03 hours.

Other Required Hours: 75 hours of supervised field experience.

Prerequisite(s): Departmental approval: approval of instructor.

APPLIED INDUSTRIAL TECHNOLOGY -
AIT

AIT-1010 Construction Measurements and Calculations
04 Semester Credits

Covers fundamental measuring and calculation skills essential to the skilled craftsperson working in the construction industry. Provides a basic level of knowledge and understanding of practical measurements used to establish building, wall and equipment locations as well as material sizes and quantities. Field application and measurement conversions are stressed. Basic

mathematical concepts are explained and applied in job situations.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, and eligibility for MATH-0950 Beginning Algebra I, and concurrent enrollment in the following courses: AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1020 Comprehension and Communication for Construction
02 Semester Credits

Covers basic skills necessary for reading factual information used in construction with concentration on supporting details, clarifying information, and end results needed for success in the construction industry.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, and eligibility for MATH-0950 Beginning Algebra I, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1030 Basic Construction Language
02 Semester Credits

Study of construction drawings to determine specifications, lines and line weights, measurements related to laying out, dimensioning, estimating and planning.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, and eligibility for MATH-0950 Beginning Algebra I, and concurrent enrolment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1040 Spatial and Mechanical Reasoning **01 Semester Credits**

Introduces the student to spatial development skills and mechanical reasoning. Included are practical applications of orthographic projections, figure conceptualization and cubic translations. Also included are mechanical analysis of pulley and gear systems and simple machines including basic properties of physics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, and eligibility for MATH-0950 Beginning Algebra, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1050 Construction Industry Orientation, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1050 Construction Industry Orientation **03 Semester Credits**

An introduction to the construction industry and to respective construction apprenticeship programs and respective entry requirements. Included are soft skills for industry success, introduction to green building techniques and apprenticeship training center visits. Instruction site exploration will be included whenever possible.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, and eligibility for MATH-0950 Beginning Algebra I, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1060 Construction Tools, and AIT-1120 Building Construction Trades Lab.

AIT-1060 Construction Tools **02 Semester Credits**

Covers the hand tools and materials of the respective building trades. Introduces the student to basic operations of respective crafts using hand tools of the trade. In addition, construction safety will be covered in depth and a certificate for an Occupational Safety and Health Administration (OSHA -10) card will be granted upon successful completion.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Eligibility for ENG-0980 Language Fundamentals I, and eligibility for MATH-0950 Beginning Algebra I, and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, and AIT-1120 Building Construction Trades Lab.

AIT-1120 Building Construction Trades Lab **03 Semester Credits**

An introduction to work in building construction trades through discussion and hands-on training, providing an understanding of the history, practices, technologies, and factors of influences upon the industry. Extensive project work will include completion of masonry, carpentry, roofing, interior finishing, residential electrical, plumbing, and construction measurement. Emphasis to be placed upon safety principles include preparation for the OSHA 10 certification in construction. Construction site visits may be included.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-0950 Beginning Algebra I and eligibility for ENG-0980 Language Fundamentals I and concurrent enrollment in the following courses: AIT-1010 Construction Measurements and Calculations, AIT-1020 Comprehension and Communication for Construction, AIT-1030 Basic Construction Language, AIT-1040 Spatial and Mechanical Reasoning, AIT-1050 Construction Industry Orientation, and AIT-1060 Construction Tools.

AIT-2990 Contracting In A Diverse World **03 Semester Credits**

Capstone course in Applied Industrial Technology. Study of construction contracting principles, procedures and practices including estimating and subcontracting practices. Includes working with diverse workforce groups in union and non-union settings utilizing teamwork.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: completion of more than fifty percent of the respective trade apprenticeship.

APPLIED INDUSTRIAL TECHNOLOGY **(Bricklaying) - ATBL**

ATBL-1300 Basic Bricklaying Trade Skills **02 Semester Credits**

Basic study of bricklaying trade skills involving positioning, laying up, mixing and applying mortar and joint formation.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATBL-1310 Bricklaying Materials, Tools and Equipment **02 Semester Credits**

Study of materials, tools and equipment used in brick and block construction.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

ATBL-1320 Basic Construction Drawings

01 Semester Credit

Study of construction drawings to determine specifications, layout of pattern bonds, measurements related to laying out, laying up, dimensioning, estimating and planning.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ATBL-1310 Bricklaying Materials, Tools and Equipment or concurrent enrollment, or departmental approval.

ATBL-1330 Wall Construction I

02 Semester Credits

Study of wall construction, grouting, layout, laying up, pattern bond pointing, parqing, and caulking. Use of reinforced masonry also studied.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1300 Basic Bricklaying Trade Skills or concurrent enrollment, or departmental approval.

ATBL-1340 Arch Construction I

02 Semester Credits

Beginning study of construction of arches. Topics include types of arches, parts and dimension of arches, and laying out centers for arches. Focuses on constructing segmental and jack arches.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1300 Basic Bricklaying Trade Skills or concurrent enrollment, or departmental approval.

ATBL-1350 Intro to Refractory

02 Semester Credits

Introductory course covering the history of refractory/refinery masonry oven, kiln and furnace construction, and the specialized equipment and materials used. Included are safety regulations and practices to be adhered to as outlined by the Occupational Health and Safety Administration (OSHA).

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

ATBL-1370 Construction Trades Safety

01 Semester Credit

Study of safe practices on job, basic first aid, and OSHA requirements for construction trades.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATBL-1530 Wall Construction II

02 Semester Credits

Advanced study of wall construction to include cavity, retaining, cantilever, gravity retaining, intersecting, and garden and foundation/basement walls.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1330 Wall Construction I or concurrent enrollment, or departmental approval.

ATBL-1540 Arch Construction II

02 Semester Credits

Study of basic plans to identify information included in a set of written specifications pertaining to concrete and to estimate amount of materials needed for project.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1340 Arch Construction I or concurrent enrollment, or departmental approval.

ATBL-1950 Construction Trades Field Experience

01-03 Semester Credits

Limited to students in the Apprenticeship Program of the Construction Trades Joint Apprenticeship Training Committees. Employment in an approved training facility. Students may earn up to three credits in one semester and repeat to a cumulative maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 12-36 hours per week.

Prerequisite(s): Formal acceptance into the Joint Apprenticeship Training Committee Apprenticeship Program; and ATBL-1300 Basic Bricklaying Trade Skills, and ATBL-1310 Bricklaying Materials, Tools and Equipment, and departmental approval.

ATBL-2510 Advanced Brick-Block Construction

02 Semester Credits

Advanced study of brick-block construction of corners, piers, pilasters and columns.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1530 Wall Construction II, and ATBL-1540 Arch Construction II or concurrent enrollment; or departmental approval.

ATBL-2520 Step and Paving Assembly Construction

02 Semester Credits

Study of masonry steps and paving assembly construction procedure, layout and lay-up.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1320 Basic Construction Drawings, or concurrent enrollment, or departmental approval.

ATBL-2530 Door and Window Construction

02 Semester Credits

Study of door and window construction to produce rough and finish masonry openings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1320 Basic Construction Drawings, and ATBL-1340 Arch Construction I or concurrent enrollment; or departmental approval.

ATBL-2710 Advanced Bricklaying Skills

03 Semester Credits

Study of advanced bricklaying skills for the construction of flashings, lintels, chases, chimneys, vents and control joints.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATBL-1320 Basic Construction Drawings, and ATBL-2530 Door and Window Construction or concurrent enrollment; or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Carpentry) - ATCT**

ATCT-1301 Introduction to Carpentry

02 Semester Credits

Introduction to carpentry apprenticeship. Includes in-depth overview of OSHA regulations as related to construction industry. A history of labor management association as it was in past, and how Joint Apprenticeship Committees interact today. Safety principles, including first aid and CPR.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1310 Carpentry Safety

02 Semester Credits

Introduction to hazards and dangers of elevated working conditions, including those that involve use of ladders and scaffolds. Hazards of working in confined spaces of limited means of egress with limited natural ventilation that are not meant for continuous occupancy will be examined. Introduction to Material Safety Data Sheets and their use to reduce chemical accidents in the workplace. Use of proper safety procedures and safety equipment as prescribed by OSHA and/or safety enforcement agencies will be emphasized.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1320 Introduction to Hand and Power Tools

02 Semester Credits

Study of wood properties, measurement techniques, types and applications of various common fasteners, properties of different woods, identification and use of hand tools, safety considerations, and use of circular portable saw, belt sander, edge sander, router, jigsaw, finish sander, and drill.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1331 Concrete Footers and Walls

02 Semester Credits

Introduction to construction of concrete form work. Includes reading of construction working drawings, layout, fabrication, and erection of standard wall, column, and footing forms.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1351 Metal Studs and Dry Walls

02 Semester Credits

Introduction to the Interior Systems industry. Construction practices, materials, and equipment used to lay out, fabricate and install metal stud systems. Related blueprint reading skills, math concepts, soffits, door frames and hardware are also an integral part of this course. An emphasis on safety regulations as according to OSHA standards.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1370 Layout

02 Semester Credits

Introduction to use of builder's level, level transit, and digital theodolite in the construction industry for establishment of elevations and grades and building layout. Course includes required math and geometry concepts and interpretation of site drawings and topographical plans generally used in construction industry.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1381 Wood Framing

02 Semester Credits

Introduction to basic principles of framing including terminology, print information, design, codes and systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1390 Welding for Carpentry

02 Semester Credits

Introduction to base level knowledge and skill in elementary shielded metal arc welding techniques and practices. Included are general theory of arc welding process, operation of welding equipment, welding safety practices, electrode characteristics and selection, identification of types of weld joints, and guided instruction and practice in arc welding.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1491 Residential Steel Framing

02 Semester Credits

Introduction to fundamentals of residential framing with steel. Course will include techniques on floor construction, interior/exterior wall construction and roof framing assemblies using steel trusses and/or rafters.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1381 Wood Framing and departmental approval: admission to any Applied Industrial Technology program.

ATCT-1550 Roof Framing I

02 Semester Credits

Introduction to construction of common roof types to include reading of construction working drawings, application of mathematical concepts and calculations related to roof structure, layout, fabrication, and erection of roof members.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-1610 Interior Finish

02 Semester Credits

Introduction to skills required to determine materials and installation of finish elements. Included are window and door trim, interior door installation, standing and running trims.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1381 Wood Framing or departmental approval.

ATCT-1710 Stairs Layout

02 Semester Credits

Introduction to basic principles of stair layout including stair terminology, print information, design, codes, and types.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-2220 Roof Framing II

02 Semester Credits

Introduction to construction of hip roofs and intersecting roofs to include reading of construction working drawings, applying terminology and math concepts related to hip roof type construction, and layout, fabrication, and erection of hip roof members.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1550 Roof Framing I or departmental approval.

ATCT-2330 Trade Show

02 Semester Credits

Installation and dismantling of trade show exhibits. Includes techniques and procedures, aerial lift, welded frame/mobile tower scaffold erector, and rigging.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-2341 Concrete Specialties

02 Semester Credits

Heavy construction methods for forming piers, columns and decks are an integral part of this course. The techniques to form elevated decks, ramps and stairways will be emphasized. This course will focus on forming

procedures as well as related mathematical concepts.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1331 Concrete Footers and Walls, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-2361 Suspended Ceilings

02 Semester Credits

Skills and techniques required to install a variety of suspended ceiling systems. Includes identification and correct use of tools, reading blueprints, and focus on suspended grid systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1351 Metal Studs and Dry Walls or departmental approval.

ATCT-2370 Interior Systems Layout

02 Semester Credits

Includes elementary concepts of the interior systems industry construction methods used to layout and fabricate standard metal stud partition walls and soffit systems. Includes related blueprint reading skills, angle and octagon wall layout, applicable math concepts, and safety regulations as prescribed by Occupational Safety and Health Administration (OSHA) standards.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1351 Metal Studs and Dry Walls, and ATCT-2361 Suspended Ceilings, and departmental approval: admission to any Applied Industrial Technology program.

ATCT-2380 Advanced Stairs

02 Semester Credits

This is an advanced stair building course covering the calculation of stair design numbers needed to construct a set of curved stairs. Applied math with specific emphasis on the geometry of circles will be covered. In addition techniques necessary to layout, cut and fabricate curved stairs will be covered and applied in shop exercises.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1710 Stairs Layout and departmental approval: admission to an Applied Industrial Technology Program.

ATCT-2390 Trussed Roofs

02 Semester Credits

Covers the framing of common roof types using manufactured trusses. Includes reading of truss design and placement drawings, truss design and layout. Also included will be the erection, bracing and sheathing of trussed roofs and the construction of blind valleys according to installation standards. Fall protection and crane safety will also be an integral part of this course.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1550 Roof Framing I, and departmental approval: enrollment in a union carpenter's apprenticeship program.

ATCT-2500 Exterior Finish**02 Semester Credits**

Introduction to basic elements of exterior finish which includes roofing, door and window framing, wall finish. Product types, weather and heat considerations are examined.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1610 Interior Finish or concurrent enrollment, or departmental approval.

ATCT-2511 Concrete Columns and Decks**02 Semester Credits**

Interpretation of plans and specifications to lay out concrete foundations and construct columns, beams and decks for large commercial buildings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1331 Concrete Footers and Walls, and ATCT-2341 Concrete Specialties, and ATCT-1370 Layout, or departmental approval.

ATCT-2520 Stairs Installation**02 Semester Credits**

Introduction to the art and science of laying out, fabricating, and installing fine staircases which are mitered and have hard balustrades using newel posts, rails, and balusters.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCT-2540 Roof Framing III**02 Semester Credits**

Introduction to layout procedures and mathematical derivation of rafter lengths found in roofs, having more than one slope and containing various offsets. Includes roofs containing all or part of hexagonal shapes or octagonal shapes. Cutting and fabrication of all rafters is an integral part of course.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1550 Roof Framing I and ATCT-2220 Roof Framing II and departmental approval.

ATCT-2560 Interior Systems III**02 Semester Credits**

In depth study of interior systems including barrel and dome ceilings and commercial door hardware used in the construction industry. Topics include use of specific tools and machining techniques required to install doors and door hardware, frames, exit devices, and associated items. Applicable math concepts, door and hardware schedules; and safety practices as prescribed by OSHA also included. Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-2361 Suspended Ceilings or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Cement Masonry) - ATCM****ATCM-1300 Fundamentals of Concrete Construction****02 Semester Credits**

Study of concrete: ingredients, steps in production, factors of concrete mix design, uses for various types of concrete, admixtures and tests for various types of fresh concrete.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCM-1310 Applied Technical Communications and Economics**02 Semester Credits**

Principles of effective industrial reports and letters; obtaining data; analysis of data; outlining and organizing of materials; letter writing techniques. Effective communication in writing, listening and speaking to meet industrial needs emphasized.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCM-1320 Basic Plan Reading**02 Semester Credits**

Study of basic plans to identify information included in a set of written specifications pertaining to concrete and to estimate amount of materials needed for project.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCM-1330 Concrete Construction Equipment**02 Semester Credits**

Study of tools used in concrete construction for testing, forming, placing and finishing fresh concrete with emphasis on care and safe use of equipment.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

ATCM-1340 OSHA Standards for the Construction Industry**03 Semester Credits**

Study of occupational safety and health standards for construction industry.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATCM-1370 Construction Trades Safety**01 Semester Credit**

Study of safe practices on job, basic first aid, and OSHA requirements for construction trades.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

Applied Industrial Technology (Cement Masonry) • (Communication Transport Systems) _____

ATCM-1390 Basic Welding Skills

02 Semester Credits

Basic welding skills emphasized to obtain a thorough knowledge of welding safety related to electrical shock, body protection, accident prevention, reporting, and ventilation. Fundamentals of arc and oxy-acetylene welding studied.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Department approval: admission to any Applied Industrial Technology program.

ATCM-1400 Concrete/Cement Forming and Finishing

03 Semester Credits

Study of various types of forms, placement of forms, placing leveling and finishing of concrete.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-1300 Fundamentals of Concrete Construction or concurrent enrollment, or departmental approval.

ATCM-1410 Commercial/Residential Form and Finish Work

04 Semester Credits

Study of building of steps, sidewalks, patios and driveways. Discussion includes types, finishes, and nosing.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2320 Blueprint Fundamentals-Construction

02 Semester Credits

Study of basic plans to identify information included in a set of written specifications pertaining to concrete and estimating amount of materials needed for the project.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-1320 Basic Plan Reading or concurrent enrollment, or departmental approval.

ATCM-2500 Fundamentals of Concrete Curing

01 Semester Credit

Study of fundamentals associated with concrete curing, reason for curing and types of curing.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2510 Fundamentals of Concrete Joints

01 Semester Credit

Study of joints in concrete to include types, locations, sealants, maintenance and reason for joints.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ATCM-1410 Commercial/Residential Form and Finish Work or concurrent enrollment, or departmental approval.

ATCM-2520 Basic Cement Patching

02 Semester Credits

Study of essentials to properly rub and sack walls for patching and steps necessary to take when preparing the walls.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2530 Concrete Restoration

03 Semester Credits

Study of surface defects in concrete and how to recognize, recommend preventative treatment, techniques and remedies to restore surface.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-2520 Basic Cement Patching or concurrent enrollment, or departmental approval.

ATCM-2700 Advanced Concrete Finishing

03 Semester Credits

Advanced study of placing and finishing a slab; placing and finishing concrete floors with various types of finishes.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATCM-1400 Concrete/Cement Forming and Finishing or concurrent enrollment, or departmental approval.

ATCM-2710 Concrete Specialty Products

01 Semester Credit

Study of pavements: types of equipment used on pavement, procedures necessary to finish pavements and operation of paving machine.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ATCM-2530 Concrete Restoration or concurrent enrollment, or departmental approval.

APPLIED INDUSTRIAL TECHNOLOGY (Communication Transport Systems) - ATCW

ATCW-1010 Worker Safety for Communication Transport

02 Semester Credits

Covers specific safety concerns for the communication transport worker including job conditions and pole climbing hazards. Includes an introduction to the Occupational Safety and Health Act (OSHA) for 10 hour certification. Topics include employee responsibilities and rights, standards, and basic hazard training.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1020 Communication Worker History**02 Semester Credits**

Covers the history of communications in America, union organizing efforts and union evolution. Includes the divestiture and deregulation of the communication industry and the effects on telephone workers and companies.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1040 Basic Information Systems**02 Semester Credits**

Certification course covering skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of cable systems in conjunction with industry standards will be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1060 Fire Stop and Overhead Safety**01 Semester Credits**

Covers the purpose and systems of fire stopping of communication transport systems including types, governing codes and standards and oversight agencies for installation and testing qualifications. Includes the safety standards including hazard recognition and operator responsibilities with respect to aerial platforms.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1210 Introduction to Information Transport - Copper**02 Semester Credits**

Advanced certification course covering in depth skills, transmission mediums and applied administration tasks required for industry proficiency. In addition, installation of copper cable systems in conjunction with industry standards will be covered. Training to lead installers to be self sufficient and able to start, run and complete small copper projects.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1230 Standards and Measurements**02 Semester Credits**

Basic course covering electrical codes and industrial standards and manufacturing warranties for the communications transport industry. In addition, industry practices for jurisdictional compliance are included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1250 Infrastructure Layout**02 Semester Credits**

Course covers the application of math concepts to the communications industry, the interpretation of construction working drawings for worksite requirements and the importance of site surveys. In addition, proposed and actual timelines are discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-1270 Grounding and Bonding**01 Semester Credits**

Basic course covering grounding and bonding of active and inactive electronic components required for worker and equipment protection. In addition, governing bodies that oversee the communications industry will be identified and application procedures are covered.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2010 Information Transport-Fiber**02 Semester Credits**

Advance certification course covering Fiber Optics skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of Fiber Optic cable systems in conjunction with industry standards will be covered. Course to enable learners to be self sufficient and able to start, run, and complete fiber optic projects.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2030 Data Theory**01 Semester Credits**

Advanced course covering the topology and transmitting information related to signal transmission and transport. In addition, purpose and function of information systems will be discussed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2050 Audio Visual**01 Semester Credits**

Course covers the types, purpose and functions of audio visual communication systems and discusses transmission fundamentals, including required skills and site preparations. In addition, legal consequences and ramifications with respect to security issues is discussed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

Applied Industrial Technology (Communication Transport Systems) • (Construction Tending) __

ATCW-2070 Information Transport Circuits

01 Semester Credits

Advanced course covering the functions and limitations of transmission signals and the provider equipment and hardware used for information transport. In addition, troubleshooting procedures, tools and equipment, will be discussed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

ATCW-2120 Advanced Systems Transport

02 Semester Credits

Certification course covering skills, transmission mediums and administration tasks required for industry proficiency. In addition, installation of cable systems in conjunction with industry standards will be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission into the CWA apprenticeship program.

APPLIED INDUSTRIAL TECHNOLOGY (Construction Tending and Hazardous Material Abatement) - ATLB

ATLB-1010 Craft Orientation for Laborers

01 Semester Credits

Course designed for Laborer apprentices in their first year. History of the labor movement in North America and the Laborers' International Union of North America (LIUNA). Fringe benefits, the apprenticeship program, union organization, work site management structure and work ethics. Basic construction math, measuring, terminology and tool identification are included.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1020 Measurements and Leveling

02 Semester Credits

Construction measuring using rulers and tapes. Introduction to leveling and layout instruments. Elevation transfer and standard building layout procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1040 Pipelaying

02 Semester Credits

Calculation and application of grades, distances and elevations of storm water and sanitary sewer piping. Procedures for preparing the site for the pipe and its installation. Safety regulations and practices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1210 Concrete Placement

02 Semester Credits

History of concrete, its properties and calculation of material quantities. Site preparation, form layout and installation. Placement and consolidation of concrete, and finishing and curing procedures will be discussed, demonstrated and practiced in field applications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1220 Traffic Control

02 Semester Credits

Covers the procedure for establishing traffic control including flagging operations for asphalt placement, barrier and control sign stationing and placement of asphalt on roadways. Presentations covering estimating asphalt quantities. Care and use of hand tools for installation procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1230 Radiation Worker

01 Semester Credits

Fundamentals of radiation, how it affects the worker and the importance of recognizing the health hazards associated with it. Methods used to clean contaminated sites and measures that are taken to avoid radiation on jobsites, including energy producing facilities and nuclear plants. Operation, maintenance and repair of the respective equipment.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1340 Mason Tending**03 Semester Credits**

Study of scaffolds related to masonry work, mortar components, and materials requirements. Includes concrete properties and ingredients, steps in making concrete, properties of cement, erection and stocking of scaffolds, mortar preparation, and tools required.

Extensive guided instruction and practice provided.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-1600 Asbestos Abatement**02 Semester Credits**

Study of concepts related to EPA, OSHA, and ODH requirements for asbestos abatement. Includes types of asbestos, diseases linked to asbestos exposure, sampling techniques, stages of development, and safe work practices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2110 Small Engines and Concrete Saws**02 Semester Credits**

Start-up procedures and safety requirements of small engine machines and gas powered saws. Trenching equipment, chain saw safety and 2-cycle and 4-cycle engines will be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2120 Pneumatic Tools and Carpenter Tending**02 Semester Credits**

The care and use of pneumatic tools including compressors and pavement breaking equipment, carpenter tending duties, and hydraulic splitters. The safe operation of a sandblaster. A review of OSHA Subpart I, pneumatic tools and personal protective equipment (P.P.E.) is given.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2130 Pressure Pipe**02 Semester Credits**

Types of pressure pipe waterline, including asbestos and ductile iron pipe, and installation techniques required to meet industry standards. Bedding requirements,

trenching safety standards, and tapping procedures.

Applied math concepts required for pressure and volume loss tests are also covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2150 Gunitite**02 Semester Credits**

Properties of Gunitite, its mixture and use and applications in the construction industry. Discussion and application of equipment operation and maintenance, including various nozzles for special conditions.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement apprenticeship program.

ATLB-2160 Tunnel Construction**04 Semester Credits**

History and terminology of tunneling in the construction industry. The need for tunnels and methods of boring is addressed. Skill development using specialty tools and equipment including jack-leg drills and hand tools for tunneling is included. Installation procedures, alignment and bolting of steel liner plates are demonstrated and practiced.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2200 Surveying Techniques and Applications**03 Semester Credits**

Study of modern surveying techniques, applications, and methodology. Includes equipment, data collection methods, field records, plane transformations, software, and routine procedures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2310 Advanced Instruments**06 Semester Credits**

Instrumentation used for highway and building construction and layout. Includes calculations required for determining local coordinates, staking and road alignments, and the pinning of a building with offsets and open and closed transverses. Also included are procedures and techniques required for setting up and using total station equipment. Field applications and exercises.

Lecture 06 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Construction Tending and Hazardous Material Abatement apprenticeship program.

Applied Industrial Technology (Construction Tending) • (Drywall Finishing)

ATLB-2320 Gas Pipe Line Worker

02 Semester Credits

Introductory course covering the general skills, safety and mainline operations required to work on gas pipe line installations. Included are exercises intended to develop job skill proficiency for site clearing and specialty operations needed to restore Right of Ways to their original state.

Lecture 02 hours. Laboratory 00 hours.

Departmental approval: admission to Construction Tending and Hazardous Material Abatement apprenticeship program.

ATLB-2400 Pipelaying Techniques

02 Semester Credits

Study of standard pipelaying techniques, practices, and procedures. Includes trenching, excavation safety, line and grade determination, and gravity flow systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2600 Scaffolds and High Elevation Techniques

03 Semester Credits

In-depth study of scaffolding and high elevation procedures. Set up and erection procedures, scaffold types, scaffold parts, and safety requirements.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2650 Demolition Techniques

03 Semester Credits

Study of industry standard demolition techniques. Topics include use of cutting tools, use of cutting torches, and safe removal of materials and clean-up procedures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework.

ATLB-2660 Grade Checking

04 Semester Credits

The layout and interpretation of surveyor stakes for highway construction. Included is the application of math concepts required for determining slope and elevation of roadways at sub-grade and top of pavement, centerlines and shoulders. The set up and operation of curbing machines and grade lasers is covered.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Construction Tending and Hazardous Material Abatement program.

ATLB-2740 Lead Abatement

03 Semester Credits

Concepts related to OSHA lead abatement regulations. Includes areas of lead abatement, responsibility of lead abatement workers, effects of lead in the body, personal protective equipment, collection methods, and labeling

systems. Extensive guided instruction and practice provided.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework, or departmental approval.

APPLIED INDUSTRIAL TECHNOLOGY (Drywall Finishing) - ATDW

ATDW-1310 Tools and Methods of Drywall Finishing

02 Semester Credits

Introduction to basic tools and procedures of drywall finishing trade including identification, components, and use of hand and power tools, and cleaning, drying, and storage of tools.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to any Applied Industrial Technology program, or departmental approval.

ATDW-1330 Materials and Methods of Drywall Finishing

02 Semester Credits

Introduction to basic materials and procedures of drywall finishing trade including identification of boards, fasteners, adhesives, beads, and trim; measuring and cutting beads and trim; application of beads to various surfaces and structures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to any Applied Industrial Technology program, or departmental approval.

ATDW-1620 Taping Tools and Procedures

02 Semester Credits

Instruction in tools and procedures in drywall taping and wiping including tools and materials, dry taping, wet taping, hopper and banjo taping methods, and wiping procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to any Applied Industrial Technology Program, or departmental approval.

ATDW-2310 Automatic Taping Tools

02 Semester Credits

Instruction in principles and procedures of automatic tool taping including tools and equipment, the Bazooka automatic taping tool, loading, holding positions, and procedures for automatic tool taping individually and in teams.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATDW-1620 Taping Tools and Procedures, or departmental approval.

ATDW-2330 Finishing Boxes**02 Semester Credits**

Instruction in use of finishing boxes including preparing, repairing, and loading flat finishing boxes; procedures for filling flats, butt joints and ceiling joints; procedures for using fastener spotters and angle finishing boxes; and cleanup procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing or concurrent enrollment, or departmental approval.

ATDW-2340 Texturing**02 Semester Credits**

Instruction in texturing, including types of textures, surface preparation, texturing machines and application, spraying techniques, using color, texturing large areas, repairing damaged areas, and hand texturing.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing, or departmental approval.

ATDW-2350 Filling Compounds and Procedures**02 Semester Credits**

Instruction in basic elements and procedures for using filling compounds including terminology, selection of filler, elements of drying, application of filler with trowel and broad knife, and finish sanding.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATDW-1310 Tools and Methods of Drywall Finishing or concurrent enrollment, or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Electrical Construction) - ATEL****ATEL-1300 Direct Current Fundamentals****03 Semester Credits**

Study of Ohm's Law, electronic theory, series, and parallel circuits, Kirchhoff's Law, motor sizes, wire sizes, voltage drop, wiring systems, and troubleshooting.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Electrical Construction program.

ATEL-1310 Alternating Current Fundamentals**03 Semester Credits**

Study of three and four wire two-phase circuits, three-phase induction star and delta circuits, power balanced and unbalanced loads, transformer principles, characteristics and connection, electrical instruments, self synchronous systems, protective relays, lamps and illumination.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATEL-1300 Direct Current Fundamentals, or departmental approval: admission to any Applied Industrial Technology program.

ATEL-1330 National Electric Code**02 Semester Credits**

Study of the National Electrical Code (NEC) for wiring and apparatus. Topics include wiring design and protection, wiring methods and materials, general use equipment, special occupancies, special equipment, and use of table and diagrams for the solution of practical wiring problems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Electrical Construction program, or departmental approval.

ATEL-1350 Industrial Safety**01 Semester Credit**

Study of selected topics to cover occupational safety and health. The student will become familiar with rules and regulations for Occupational Safety and Health Administration (OSHA) compliance.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATEL-1360 Blueprint Fundamentals - Electrical**02 Semester Credits**

Introduction to blueprints. Topics include identifying components, mechanical and electrical symbols, diagrams, architectural views, and common scales. Also includes blueprint specification, schedules, and system integration.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATEL-2300 Industrial Electronics Fundamentals I**03 Semester Credits**

Introduction to electronics which includes semi-conductor theory and circuits, transistor theory and circuits, power supplies, integrated circuits, oscillator circuits, photosensitive devices, and pulse circuits.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATEL-1310 Alternating Current Fundamentals, or departmental approval.

ATEL-2310 Industrial Electronics Fundamentals II
03 Semester Credits

Study of electricity as it relates to environmental control systems, fire alarms, security systems, smoke detectors, and Heating, Ventilation, and Cooling (HVAC) systems.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ATEL-2300 Industrial Electronics Fundamentals I, or departmental approval.

ATEL-2350 Programmable Logic Controllers
03 Semester Credits

Introduction to programming techniques, and hardware configuration and theory of operation of a programmable logic controller. Systems to be studied may include the Allen-Bradley programmable logic controller (PLC) 2 and Modicon Industrial Controllers.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ATEL-1300 Direct Current Fundamentals, or departmental approval.

ATEL-2500 AC/DC Motors and Generators
04 Semester Credits

Direct current (DC) motor construction and principles of operation, kinds of DC motors and their characteristics and control, permanent magnet meter movement, ammeter and voltmeter construction, operation care and use, watt-meter and wheatstone bridge area. Other topics include DC motors, alternators, rotating magnetic fields, alternating current (AC) motors, speed control, types of winding, and introduction to AC motor control.
Lecture 04 hours. Laboratory 00 hours.
Prerequisite(s): ATEL-1300 Direct Current Fundamentals, and ATEL-1310 Alternating Current Fundamentals; or departmental approval.

ATEL-2510 Motor Controls
03 Semester Credits

Introduction to direct current (DC) and alternating current (AC) motor control circuits.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ATEL-2310 Industrial Electronics Fundamentals II or concurrent enrollment, or departmental approval.

ATEL-2700 Electrical Instrumentation
04 Semester Credits

Introduction into various types of instruments employed in industry, along with operating principles and actual application. Instruments covered are those used in measurement, transmission, and control of various industrial processes.
Lecture 04 hours. Laboratory 00 hours.
Prerequisite(s): ATEL-2310 Industrial Electronics Fundamentals II or concurrent enrollment, or departmental approval.

APPLIED INDUSTRIAL TECHNOLOGY
(Floorlaying) - ATFL

ATFL-1300 ATFL Residential Installation Procedures
02 Semester Credits

Introduction to residential flooring products and installation procedures. Includes residential carpet and vinyl product knowledge, and custom installations (borders, insets, patterns, and upholstered stairs). Also includes customer relations, etiquette, and communication skills related to residential work.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATFL-1450 Floorlaying Concepts
02 Semester Credits

Comprehensive study of floorlaying essentials, including material properties, measurement techniques, types and applications of various sheet good adhesives, identification and use of hand tools and power equipment used in the floorlaying industry. Also included are concepts commonly found in construction blueprints including symbols, abbreviations, and conventions required in drawing interpretation. Floor preparation for installations of tile, sheet goods, carpeting, hardwood, laminates and ceramics also included.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): Departmental approval: admission to Applied Industrial Technology Floorlaying program.

ATFL-1600 Modular Tile
02 Semester Credits

Basics of modular tile installation. Includes math and geometry concepts required for estimating materials, room layouts and interpreting construction drawings.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): ATFL-1450 Floorlaying Concepts, or departmental approval: admission to Applied Industrial Technology Floorlaying program.

ATFL-1610 Jute and Action Back Carpeting
02 Semester Credits

Carpeting and manufacturing process as related to jute and action-back product types. Topics include material, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval.

ATFL-1620 Ceramics I**02 Semester Credits**

Wall and floor treatment, grouting and installation of ceramic tile. Includes related math and blueprint reading exercises.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1610 Jute and Action Back Carpeting or concurrent enrollment, or departmental approval.

ATFL-1630 Wood Flooring I**02 Semester Credits**

Wood flooring materials and installation including strip, strip and plank, parquet, installation techniques and tools for installation.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1640 Sheet Goods Concepts**02 Semester Credits**

Floor installation requiring special treatment of adhesives and seam, sheet good products requiring interflex systems, heat seam welding and/or chemical welding. Also presented will be product usage and handling and application of concepts and materials.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1650 Sheet Goods - Flash Coving**02 Semester Credits**

Products and components used in flash cove and sanitary floor installation. Topics include techniques of installation, blueprint reading and use of applicable tools.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, and ATFL-1640 Sheet Goods Concepts or concurrent enrollment; or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1710 Velcro and Modular Carpeting**02 Semester Credits**

Carpeting and manufacturing process as related to Velcro and modular product types. Includes materials, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1720 Sheet Goods - Geometric Layout and Inlay**02 Semester Credits**

Study of advanced floorlaying techniques used in layout and installation of sheet goods in specialty situations including geometric shapes and producing templates.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1650 Sheet Goods - Flash Coving or concurrent enrollment, and ATFL-1450 Floorlaying Concepts or concurrent enrollment; or departmental approval: admission to any Applied Industrial Technology program.

ATFL-1730 Unitary Back and Enhancer Back Carpeting**02 Semester Credits**

Carpeting and manufacturing processes as related to Unitary Back and Enhancer Back product types. Topics include materials, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or ATFL-1710 Velcro and Modular Carpeting or concurrent enrollment; or departmental approval: admission to Applied Industrial Technology program.

ATFL-2300 Ceramics II**02 Semester Credits**

Ceramics design, material and tile installation in wet areas such as food prep, pools, shower and laundry.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1620 Ceramics I or concurrent enrollment, or departmental approval.

ATFL-2320 Wood Flooring II**02 Semester Credits**

Advanced flooring systems using acrylic, engineered, and laminate systems with special attention given to custom layouts such as herringbone and diagonal installations, riser, tread, bullnose installation, and proper floor sanding techniques.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval.

ATFL-2400 Sheet Goods - Specialty Products**02 Semester Credits**

Study of specialty flooring systems, requiring antibacterial protection and wet areas needing moisture close tolerance installation. Course also includes presentations, one-piece flash coving demonstrations, heat welded seams demonstrations, and cutting and fitting special components such as cove steps and cap metals.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1640 Sheet Goods Concepts, or concurrent enrollment, and ATFL-1650 Sheet Goods - Flash Coving, or concurrent enrollment and departmental approval.

ATFL-2430 Woven and Axminster Carpeting
02 Semester Credits

Carpeting and manufacturing process as related to woven and axminster product types. Includes materials, hand and power tools, job preparation, layout and installation procedures, and interpretation of construction drawings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATFL-1450 Floorlaying Concepts or concurrent enrollment, or departmental approval.

APPLIED INDUSTRIAL TECHNOLOGY
(Glazing) - ATGL

ATGL-1330 Hand Tools for Glaziers
02 Semester Credits

Introduction to hand tools for glazing, including basic hand tools such as screwdrivers, wrenches, pliers; levels and transits; glass, plastic, and metal cutters; pliers, lifters, and tongs, punches, chisels, rivet guns, and taps.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1620 Glass and Mirror Replacement and Installation
02 Semester Credits

Instruction in glass replacement and mirror layout, measurement cutting, edging and mounting. Includes safety procedures, and glass installation using putty.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1630 Basic Welding
02 Semester Credits

Introduction to arc welding and oxy-acetylene cutting including shop safety, electrode identification and classification and selection, all position welding, set up of fillet, power sources, weld size, and weld symbols.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-1640 Door Fabrication and Installation
02 Semester Credits

Door fabrication and installation, including installation and maintenance of manual and power assisted revolving doors; fabrication and installation of aluminum doors; installation of specialty doors and showcases; and safety procedures and regulations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATGL-2330 Transits, Leveling Instruments and Lasers
02 Semester Credits

Use of transits, levels, and lasers for glazing installation including elements of instruments; types of instruments; care and handling; setting up, leveling, and using instruments; and specific applications of leveling and installation.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.

ATGL-2340 Advanced Welding
02 Semester Credits

Instruction in advanced welding, including oxy-acetylene, M.I.G., T.I.G., and F.C.A.W. welding processes, welding of cast iron, aluminum, copper alloys, and stainless steel, hardfacing, and plasma cutting.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATGL-1630 Basic Welding or concurrent enrollment; or departmental approval.

ATGL-2350 Curtainwall Fabrication and Installation
02 Semester Credits

Instruction in curtainwall principles and methods, including methods and standards; layout practices and tolerances; curtainwall systems and erection procedures for I-Beam, Stickwall, and Trusswall construction.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.

ATGL-2370 Sealants
02 Semester Credits

Instruction in use of sealants including terminology, properties, forms, classifications, and sealant selection; sealant application, testing, and remedial caulking; joint types and design; substrate preparation primers and backer rods; safety procedures and use of MSDS sheets.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATGL-1330 Hand Tools for Glaziers; or departmental approval.

ATGL-2400 Advanced Rigging and Hoisting
02 Semester Credits

Advanced procedures of rigging and hoisting including rope materials, care, and handling; knot tying; slings; rigging hardware and hoisting techniques; hand signals; and safety procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10).

**APPLIED INDUSTRIAL TECHNOLOGY
(Ironworking) - ATIW****ATIW-1300 Structural Steel Concepts****02 Semester Credits**

Introduction to structural steel concepts, including an overview of historical use of iron and steel in construction. Fundamental principles of and preparation for erection of structural steel; blueprint reading; and proper use of tools, according to OSHA regulations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Ironworking Apprenticeship Program, or departmental approval.

ATIW-1310 Safety for Ironworkers**01 Semester Credit**

Occupational safety and health standards for construction industry in general, and ironworking trade specifically. Includes regulations and procedures for fall protection; electrical work; scaffolding; confined spaces; personal protective equipment; materials handling, storage, use and disposal; hand and power tools; steel erection; and cranes, derricks, hoists, elevators, and conveyors.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Admission to Ironworking Apprenticeship Program, or departmental approval.

ATIW-1320 Steel Construction Procedures**01 Semester Credit**

Steel construction procedures, including necessary individual and raising gang skills, and proper use of tools according to OSHA regulations. Introduction to bridge types and components. Blueprint reading relevant to layout and erection.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, or departmental approval.

ATIW-1330 Erection Concepts and Practices**03 Semester Credits**

Principles and techniques of structural steel erection, including detailing procedures. Covers installation of temporary flooring, accurate alignment of steel assembly, safety nets and railings, and various types of connections: bolts, rivets and pins, layout and erection of bar joists, bridging, scaffolds and ladders, according to OSHA regulations. Includes blueprint reading.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, and ATIW-1310 Safety for Ironworkers or concurrent enrollment, or departmental approval.

ATIW-1400 Principles of Reinforcing Steel**02 Semester Credits**

Basic principles of reinforcing steel, using tools and methods necessary for layout and fabrication, according to engineering and placing drawings. Application of basic

structural building forms to reinforce concrete structures, including structural value of footings and use of beam and slab design; history of reinforced concrete and manufacturing process of reinforcing steel; and basic types of highway structures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, and ATIW-1310 Safety for Ironworkers or concurrent enrollment; or departmental approval.

ATIW-1410 Practical Applications of Reinforcing Steel
01 Semester Credit

Applications relating to placement of reinforcing steel in footings, walls, columns, beams, girders, joists and slabs and to bar splicing. Continued study of highway structures, including airport paving. Introduction to reinforcing accessories, dowels, and mechanical couplers.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ATIW-1300 Structural Steel Concepts or concurrent enrollment, and ATIW-1310 Safety for Ironworkers or concurrent enrollment; or departmental approval.

ATIW-1600 Welding Fundamentals for Ironworkers
03 Semester Credits

Fundamentals of welding with special emphasis on the ironworking trade. Includes welding processes; cutting and gouging processes; operational and site safety; welding equipment and tools; and safety equipment and protective clothing.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-1300 Structural Steel Concepts, and ATIW-1310 Safety for Ironworkers; or departmental approval.

ATIW-2300 Shielded Metal Arc Welding
03 Semester Credits

Shielded metal arc welding principles and techniques. Includes required equipment tools and supplies, electrical and environmental safety, eye hazards associated with arc burn, and protective clothing requirements.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-1600 Welding Fundamentals for Ironworkers or concurrent enrollment, or departmental approval.

ATIW-2310 Welding Specialties
03 Semester Credits

In-depth study of welding and cutting techniques. Students will perform oxy-fuel gas welding and cutting techniques, arc cutting and gouging, and stud welding as applied to ironworking trade.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2300 Shielded Metal Arc Welding or concurrent enrollment, or departmental approval.

Applied Industrial Technology (Ironworking) • (Manufacturing Technology)

ATIW-2320 Welding Blueprints and Design **03 Semester Credits**

In-depth study of welding blueprint lines, arrows, views, and symbols; basic layout construction; and identification of welding positions, parts of fillet welds, groove joints and welds, and backup materials. Includes recognition, drawing, measurement calculations, and problem solving.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2310 Welding Specialties or concurrent enrollment, or departmental approval.

ATIW-2330 Pre-Construction Planning of Specialty Applications

02 Semester Credits

Includes erection sequence and handling of specialty products. Installation of members and connections performed in compliance with OSHA regulations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2320 Welding Blueprints and Design, or departmental approval.

ATIW-2340 Specialty Installation Equipment **02 Semester Credits**

Study and use of equipment in installation of specialty building products. Safety training including employee, equipment, and jobsite safety and procedures for material handling and inspections, according to OSHA regulations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2330 Pre-Construction Planning of Specialty Applications or concurrent enrollment, or departmental approval.

ATIW-2350 Ornamental Systems and Railings **02 Semester Credits**

Installation methods for and identification of various ornamental applications, including curtainwall and window wall systems, stairs, railings, and wall handrails, and their anchors and fasteners. Use of hand and power tools for installation. Operation of various layout instruments.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2330 Pre-Construction Planning of Specialty Applications or concurrent enrollment, or departmental approval.

ATIW-2360 Ornamental Applications **02 Semester Credits**

Procedures for and installation of ornamental applications, including rolling service doors, sloped walls, metal and ship ladders, toilet partitions, vanity supports, relief angles, flagpoles, and chain link fences.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2350 Ornamental Systems and Railings or concurrent enrollment, or departmental approval.

ATIW-2400 History of the Iron Workers Union **03 Semester Credits**

The Iron Workers Union in America from 1896 through today, including people and events that influenced the organization.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2350 Ornamental Systems and Railings or concurrent enrollment, or departmental approval.

ATIW-2500 Rigging and Hoisting **03 Semester Credits**

Procedures of rigging and hoisting including identification, handling, and storage of equipment: chains, hardware, reeving, slings with practice of knot tying and splicing. Topics include characteristics and uses of cranes, procedures for inspection, safe operation, testing and maintenance of cranes, including machine assembly and set-up procedures. Safety procedures and hand signaling, according to OSHA regulations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATIW-2360 Ornamental Applications or concurrent enrollment, or departmental approval.

APPLIED INDUSTRIAL TECHNOLOGY **(Manufacturing Technology) - ATMT**

ATMT-1000 Mechanical and Spatial Relations **04 Semester Credits**

Relationship between two-view to three-view images, charts containing diagrams, mechanical sequences, mechanical series, tool usage, tool relationships to fasteners, object turning and problem solutions. Basics of visualizing three-dimensional object from two-dimensional front, side, and top view. Patterns with three-dimensional figures that can be made from hidden and object views of visual figures. Identifying tools, tool relationship and selection practices. Perceptual ability, spatial views, matching parts and figures. Visualization of shapes or patterns that can result from fitting together cut-up pieces; graphically describing size and shape to represent basic mechanical elements; and cube counting.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATMT-1100 Manufacturing Skills I**03 Semester Credits**

Stresses relationship of engineering drawing to applications of manufacturing part including lines, views, dimensioning, metric system, calculating cut of points, freehand lettering, sketching, and use of drafting tools to construct blueprint. Includes fraction to decimal conversion, drafting line using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols, and broken sections.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Sponsorship in approved apprenticeship program offered by a member company, or acceptance to PMT certificate program.

ATMT-1110 Manufacturing Skills II**02 Semester Credits**

Provides skills in layout techniques and operations, including bolt hole circles, location of surfaces related by non-right angle triangles, and points of tangency. Includes layout drawing by sketching proper views from actual part.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-1100 Manufacturing Skills I or concurrent enrollment; or departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1120 Machine Operations I**06 Semester Credits**

Introduction to machine shop practices to produce manufacturing parts. Includes operations of machinery, terminology, safety, measurement, layouts, print reading, machine set-ups, hand tools, measuring tools, cutting tools, and processes in production work flow. Emphasis on use of typical equipment found in conventional machine shop. Extensive hands-on projects.

Lecture 01 hour. Laboratory 15 hours.

Prerequisite(s): Departmental approval: Admission to any Applied Industrial Technology program.

ATMT-1200 Machine Tool Theory**04 Semester Credits**

Presents foundation for study of manufacturing methods, processes, related equipment, and tools of industry, requiring student to understand shop safety practices, job planning, feeds and speeds, layout tools and procedures, hand tools and bench work, metal cutting saws, drilling machines, lathe, milling machines, jig bore and jig grinder, surface grinder, E.D.M, and abrasives.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1300 Manufacturing Procedures**02 Semester Credits**

Principles of blanking and/or piercing dies; bending; screw and dowel holes; die life; punches; pilots; die block

construction; strippers and stock guides; shredders and knockouts; nest gages; pushers; die stops; stock material utilization; strip layouts; and die sets. Includes techniques and theory of building stamping dies with topics including cutting and forming operations, primary die components, and internal parts of complete die.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-1200 Machine Tool Theory, or concurrent enrollment and departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1500 Manufacturing Technology Skills I**04 Semester Credits**

Advanced study of relationship of engineering drawings to applications of machine shop production of precise parts, die, and mold components, to provide students with theory on use of coordinate measuring machine (CMM) for machine tool trades. Machine shop engineering drawing mathematics, used in development and production of part from print in machine shop, will be stressed. Application of engineering drawing skills on projects made in shop. Emphasis on geometric dimensioning. Students will learn to read and comprehend advanced engineering drawings from various industries.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-1200 Machine Tool Theory, and departmental approval: admission into Applied Industrial Technology - Manufacturing Technology program.

ATMT-1600 Introduction to CAD**02 Semester Credits**

Introduction to computer systems and computer-aided drafting (CAD) software as tools used to produce engineering drawings. Keyboarding and computer operating skills are overlaid with software commands. Command topics include line coordinate systems, circles and arcs, geometry creation, text styles, editing geometry and text, controlling drawing display, drawing aids, layers, blocks, hatching, and dimensioning.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ATMT-1300 Manufacturing Procedures or concurrent enrollment, and departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-1950 Field Experience

02 Semester Credits

Practical application of manufacturing concepts in field. Limited to students in the apprenticeship program of the Manufacturing Trades with employment in approved training facility. May be repeated up to four times.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 24 hours per week.

Prerequisite(s): ATMT-1100 Manufacturing Skills I or concurrent enrollment, and departmental approval: admission to Applied Industrial Technology - Manufacturing Technology program.

ATMT-2120 Machine Operations II

06 Semester Credits

Theory and application of use of engine lathe, planning machines, milling machines, grinders, quality control, metallurgy, and fasteners. Emphasis on use of typical equipment found in conventional machine shop.

Extensive hands-on projects.

Lecture 01 hour. Laboratory 15 hours.

Prerequisite(s): ATMT-1120 Machine Operations I.

ATMT-2300 Advanced Manufacturing Procedures

02 Semester Credits

Capabilities of computer aided design (CAD) systems are covered. Students will be required to produce working engineering drawings. Instruction in tool path generation, local CNC programming and 2D simulation, including capabilities of computer aided manufacturing (CAM) systems.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ATMT-1600 Introduction to CAD, and departmental approval.

ATMT-2400 Advanced Die Making

02 Semester Credits

Study of most important elements of die function and performance. Resource for apprentices, tool designers, and others who need a working reference on design, construction, and use of stamping dies.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2410 Advanced Moldmaking

02 Semester Credits

Study of fundamentals of mold construction, processes and construction of plastic molds such as compression, transfer, pressure molding of non-ferrous alloys, rubber molds, dies cast molds, and injection molds. Includes foundations of mold construction, depending on design of part, material used, equipment available, and ingenuity of moldmaker.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2420 Advanced Precision Machining

02 Semester Credits

Advanced study of relationship of materials, fixtures, and special machining operations as they relate to applications of machine shop production of precise parts, dies, and mold components. Provides theory on use of machining exotic materials, hard turning, machining of plastics, fourth and fifth axis programming, coolants and specialty inserts. Included are practical applications and machine shop mathematics formulas used in fixture and holding device design. Provides knowledge of castings, weldments, tool coatings and manufacturing methods that are becoming part of today's technology such as waterjets and lasers. Student will learn advanced metallurgy processes, and standard procedures for troubleshooting all types of manufacturing projects.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2500 Manufacturing Technology Skills II

04 Semester Credits

Study of relationship of engineering drawings to applications of manufacturing parts for CNC machines, screw machines, mold, and die components. Topics include dimension and tolerance; form tolerances; calculation of tolerance using equations; calculation of tolerances using standard shop formulas; profile and run out tolerances; location tolerances; geometric dimensioning; geometric applications; transferring engineering drawing using computer graphics; and development of engineering drawing with computer.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-2300 Advanced Manufacturing Procedures or concurrent enrollment, and departmental approval.

ATMT-2600 CNC Programming / Operations

02 Semester Credits

Fundamentals of computer application as aid to machining processes. Emphasis on engineering drawing analysis, using trigonometry and other forms of mathematics to determine programming points; ascertaining implied part dimensions; determinations of machining parameters; calculation of speeds; feeds and tool offset; establishment of work zero and tool home positions. Manual programming of computer numerical control (CNC) machines using G-codes; tooling and set-up of CNC lathes and milling machines for machining operations; verification of toolpaths by simulation; and operating CNC machines to produce mechanical parts.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ATMT-2300 Advanced Manufacturing Procedures or concurrent enrollment, and departmental approval.

ATMT-2620 CAM Principles**02 Semester Credits**

Study of geometric modeling, using selected CAD/CAM packages to graphically model parts in 2D, 3D wire-frame and solid, generating G-codes, post-processing G-codes into formats interpretable by given CNC controllers.

Topics include editing G-codes with verification of toolpaths in 3D and solid model simulation; downloading path programs into CNC turning and milling centers; and machining parts. Use of metrology methods to check dimensional and geometrical accuracy of produced parts.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ATMT-2600 CNC Programming / Operations, and departmental approval.

ATMT-2700 Manufacturing Technology Skills III**04 Semester Credits**

Advanced study of manufacturing methods, processes, related equipment, and tools of industry, requiring student to understand standard requirements to being a Journeyman Tool and Diemaker, Moldmaker, Precision Machinist, Precision Screw Machine operator, or Precision CNC operator. Topics include practices of job planning, maximum use of shop supplies, and how to work independently, efficiently and effectively. Scope is to demonstrate thin margin that is required to making a job profitable, helping student to troubleshoot problems that may occur with effective problem solving methods and technique.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-2500 Manufacturing Technology Skills II, and departmental approval.

ATMT-2990 Manufacturing Operation Principles**03 Semester Credits**

Capstone course in Manufacturing Technology. Topics include manufacturing flow, quoting, tool and materials supply inventory control, outsourcing, supplier tracking and UCC coding.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATMT-2700 Manufacturing Technology Skills III or concurrent enrollment.

**APPLIED INDUSTRIAL TECHNOLOGY
(Millwrighting) - ATMW****ATMW-1320 Introduction to Millwrighting****02 Semester Credits**

Study of basic millwrighting concepts. Topics include hand and precision tool recognition and use, drilling and tapping, belt drive installation and application, and chain

drive installation and application.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1330 Print Reading for Millwrights**02 Semester Credits**

Study of print reading as applied to activities of millwrights. Topics include related math concepts, machine print components including orthographic views, line types, scale, exploded views, installation prints, revision information, optical tooling, and specifications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1340 Introduction to Pile Driving**02 Semester Credits**

Study of pile driving basics. Topics include history, definition of industry specific terms, blueprint reading, types and uses of pile driving tools and equipment, types of piling, skills and duties of pile drivers, safety equipment, and review of OSHA standards relevant to pile driving.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1350 Hydraulics/Centrifugal Pumps**02 Semester Credits**

Covers the operation and the maintenance of overhung centrifugal pumps and mechanical seals. Disassembly, inspection, checking clearances and rebuilding these pumps to industry standards will be an integral part of this course.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATMW-1450 Heavy Rigging**02 Semester Credits**

Study of rigging hardware and equipment required to lift equipment and material. Topics include mobile, fixed, tugger, and hand rigging cranes, formulating a safe lifting plan through the use of applicable calculations, weight estimation, sling loads, signaling, crane limitations, and implementing OSHA safety regulations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1490 Millwright Pile Driver Weld I **02 Semester Credits**

Study of basic concepts and implementation of shielded metal arc welding. Topics include theory of arc welding, operation of welding equipment, safety practices, electrode characteristics and selection, identification of weld joint types, and personal protective equipment (PPEs).

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1600 Rotating Equipment **02 Semester Credits**

Study of rotating equipment. Topics include precision equipment and tools and terminology, bearing type installation and application, math concepts, shaft alignment, reverse dial alignments, laser alignment application and interpretation, and safety measures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-1720 Machinery Installation **02 Semester Credits**

Introduction to layout, leveling, and installation of heavy industrial equipment. Topics include hand rigging techniques, proper forklift operations, shoring, heavy timber, false work, and installation of equipment according to OSHA regulations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry, or departmental approval.

ATMW-2120 Shaft Alignment **02 Semester Credits**

In depth study of concepts related to shaft alignment. Topics include rim and face alignment procedures, indicator set up and use, soft foot identification and elimination, correction methods, mathematical alignment concepts, and coupling installation and application.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry; or departmental approval.

ATMW-2130 Shaft Alignment II **02 Semester Credits**

Review of rim and face alignment procedures. Covers reverse dial indicating. Application of mathematical formulas used to solve alignment problems and graphing techniques will be covered. Laser alignment systems and

all of their functions will also be included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATMW-2230 Millwright Pile Driver Weld II **02 Semester Credits**

In-depth study of multi-pass horizontal and vertical-up groove welds using the shielded metal arc welding process. Topics include blueprint reading for welders, introduction to D1.1 structural weld code requirements, welding safety practices, and guided practice time.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMW-1490 Millwright Pile Driver Weld I or concurrent enrollment; or departmental approval.

ATMW-2330 Precision Optics **02 Semester Credits**

In depth study of concepts related to precision optics. Topics include operational theory, operation of tilting level and jig transit, interpretation and application of a Whyteface® scale, peg testing, measurement theory, and mirror usage.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-2350 Floor Conveyor **02 Semester Credits**

Study of floor conveyor systems used to transfer materials in assembly line operations and related manufacturing facilities. Topics include blueprint reading, layout procedures, component installation, proper use of an aerial lift, and OSHA safety requirements.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-2400 Steam Turbines **02 Semester Credits**

Covers the various types of steam turbines currently in use. Students will learn how a turbine operates and will identify the various components of a turbine. Students will disassemble a steam turbine and determine the millwrights' responsibilities while working on steam turbine.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATMW-2500 Combustion Turbine

02 Semester Credits

In-depth study of combustion turbine use, installation, and repair. Topics include turbine safety concepts, component identification, maintenance, rigging procedures, installation, and fuel nozzle installation and repair.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry or concurrent enrollment; or departmental approval.

ATMW-2520 Millwright Pile Driver Weld III

02 Semester Credits

Study of advanced topics in millwright and pile driver welding. Topics include multi-pass vertical-up groove, technical review of material presented in ATMW 1490 Weld I and ATMW 2230 Weld II, carbon arc process, non-destructive testing, alloy welding, safety practices, guided practice time, and preparation for the American Welding Society (AWS) D1.1 vertical-up unlimited thickness certificate test.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMW-2230 Millwright Pile Driver Weld II or concurrent enrollment, or departmental approval.

ATMW-2530 Advanced Welding IV

02 Semester Credits

Course covers the welding techniques and skills required for welding certification in wire feed and standard shielded metal arc welding (SMAW) or stick welding. Included are techniques required for machine set-up for Tungsten Inert Gas (TIG) welding and its welding processes.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: acceptance to any Applied Industrial Technology program.

ATMW-2700 Monorail

02 Semester Credits

Study of monorail systems used to transfer materials in assembly line operations and related manufacturing facilities. Topics include blueprint reading, layout procedures, component installation, and screen guard installation.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Acceptance to any Applied Industrial Technology program, and ATCT-1301 Introduction to Carpentry; or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Operating Engineers) - ATOE**

ATOE-1100 Operating Engineering Concepts

04 Semester Credits

Basic concepts of compaction, compaction equipment, design of paving operations, and design concepts of asphalt and skid steer loaders. Tractor-scraper and oiler responsibilities also included.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-1200 Basic Mechanical Concepts

03 Semester Credits

Introduction to analysis of fuels, components and principles of fuel systems, common units, air intake systems, cooling system designs and maintenance, hydraulic systems including Pascal's law, basics of engine electrical systems, history, development and theory of internal combustion engines. Discussion on function of clutches, basics of power train, use of brakes, and components of tracks and tire construction, selection, maintenance and storage.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-1650 Graders and Plans

02 Semester Credits

Introduction to graders operations, safety information fundamentals, terminology and various support grader operations, pre and post operations, methods of finish grading, and fundamentals of construction leveling. Topics include terminology of laser and laser machine controls; proper set-up procedures; safe work practices in the use of lasers and components of laser machine controls; and common highway plans for construction projects including introduction to basic plans, their purpose, and learning how to interpret them.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-1700 Paving, Tractor, Backhoe Operators

03 Semester Credits

Introduction to design concepts of paving, identifying operation controls of any hydraulic and loader equipment, basic operations and maintenance safety of equipment, standard and conventional scraper, differentiate one-engine and two-engine scrapers, inspection and start-up, and safety procedures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to any Applied Industrial Technology program.

ATOE-2100 Mobile Crane

02 Semester Credits

In-depth focus on mobile cranes. Topics include components and parts, crane signals, communications, operational safety in set-up and OSHA standards and regulations, and using load charts to calculate load weight. Also includes wire rope and rigging, and electrical hazards.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1100 Operating Engineering Concepts, or departmental approval.

ATOE-2200 Mechanical Repair

03 Semester Credits

Study of major mechanical systems. Detailed troubleshooting practice and procedures. Clutch diagnosis and repair, types of power trains and undercarriage maintenance also included.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1200 Basic Mechanical Concepts, or departmental approval.

ATOE-2600 Bulldozer Practice

03 Semester Credits

Study of standard features, standard procedures, tools, inspection, and controls of bulldozers. Topics include attachments, terminology, inspection and controls.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1650 Graders and Plans, or ATOE-2640 Advanced Grader Practice or concurrent enrollment; or departmental approval.

ATOE-2620 Backhoe Practice

03 Semester Credits

Study of standard features, standard procedures, tools, inspection, and controls of backhoes. Topics include attachments, terminology, inspection, and controls.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1700 Paving, Tractor, Backhoe Operators, or departmental approval.

ATOE-2640 Advanced Grader Practice

03 Semester Credits

Study of standard features, standard procedures, tools, inspection, and controls of graders. Topics include attachments, terminology, inspection and controls.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1650 Graders and Plans, or ATOE-1700 Paving, Tractor, Backhoe Operator; or departmental approval.

ATOE-2650 Safety Training Passport

01 Semester Credit

Introduction to the Occupational Safety and Health Act (OSHA). Topics include employee responsibilities and rights, standards, and basic hazard training.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ATOE-1100 Operating Engineering Concepts, or departmental approval.

ATOE-2660 Grader Safety

02 Semester Credits

Application of safety operations of graders. Topics include reading warning signs and labels, avoiding general hazards, monitoring systems and cab features, operation techniques and towing.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1650 Graders and Plans, or ATOE-2640 Advanced Grader Practice or concurrent enrollment; or departmental approval.

ATOE-2670 Rough Terrain Forklift Operation

02 Semester Credits

In-depth focus on OSHA regulations regarding industrial trucks, specifically OSHA 1910.178. Also includes characteristics of forklifts, identification of components of a truck and their functions, safety operations and safety equipment used on forklifts.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1100 Operating Engineering Concepts, and ATOE-1650 Graders and Plans; or departmental approval.

ATOE-2680 Hazardous Material Handling and Field Safety

02 Semester Credits

Introduction to governmental laws and agencies involving worker's health and safety protection. In-depth study of hazardous waste and emergency response operations, including the formation of Occupational Safety and Health Administration (OSHA). Regulations pertaining to specific rights to Code of Federal Regulations - OSHA 29 CFR 1910.120 (The Access to Exposure and Medical Records Standard), and decontamination procedures. Includes advanced concepts in informational programs, heat and cold stress, normal cooling mechanisms, heat-related illnesses, identifying signs of heat and cold stress and their prevention, diesel exhaust risks, asphalt emissions, Respiratory Standard Act 1910.134 and respiratory protection.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATOE-1100 Operating Engineering Concepts, and ATOE-1650 Graders and Plans; or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Painting) - ATPT**

ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing

02 Semester Credits

Introduction to basic painting trades skills, including apprenticeship rights and responsibilities; painting, drywall finishing, glazing, and sign and display terminology; tools, materials, and equipment; preparation and application procedures; and safety practices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1320 Safety Standards for Construction (OSHA-10)

03 Semester Credits

General instruction for occupational safety and health, including safety rules and procedures for fall protection, electrical work, scaffolding, ladders, confined spaces, personal protective equipment, and other trade related safety procedures. OSHA-10 certification will be completed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1330 Filling Compounds and Procedures

02 Semester Credits

Instruction in basic elements and procedures for using filling compounds, including terminology, selection of filler, elements of drying, application of filler with trowel and broad knife, and finish sanding.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1340 Wall Preparation and Repair

02 Semester Credits

Instruction in wall preparation and repair, including pre-job inspection, preparation of job site, and repair of wallboard, painted surfaces, plaster, and stains.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1620 Wood Finishing

02 Semester Credits

Instruction in principles and procedures in wood finishing, including characteristics of woods, specifications and finishing procedures, preparation of surfaces, and maintenance and repair of finishes.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1630 Color Mixing and Matching

02 Semester Credits

Instruction in color mixing and matching, including color terminology and theory, lighting and surface effects of color, use of light boxes and viewing aids, and sequence and techniques of color mixing and matching.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1640 Rigging and Hoisting

02 Semester Credits

Introduction to basic procedures of rigging and hoisting including rope materials, care, and handling; knot tying; slings; rigging hardware and hoisting techniques; hand signals; and safety procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1320 Safety Standards for Construction (OSHA-10), or departmental approval.

ATPT-1650 Blueprints I: Construction Fundamentals

02 Semester Credits

Introduction to basic principles of blueprint reading including terminology, types of drawings, specifications and schedules, lines, symbols, scales, dimensions, and uses for painting crafts.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-1660 Labor in American Society

02 Semester Credits

Instruction in nature of work and role of unions in American society, including history of workers and unions from early republic to contemporary era, role of unions at workplace and in society, relationship of workers and unions to economy, law, and democracy.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and any Applied Industrial Technology program, or departmental approval.

ATPT-2310 Wallcovering and Paperhanging

03 Semester Credits

Instruction in principles and application of wallcoverings including types of wallcoverings, surface preparation, rollage estimates, matching prints and patterns, pasting, and trimming techniques.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2320 Safe Work Practices

03 Semester Credits

Instruction in basic and advanced safe work practices including general safe work practices, power tools, shop machinery, and advanced OSHA-30 rules.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2330 Spray and Industrial Painting

02 Semester Credits

Introduction to basic principles of spray painting including spray painting terminology, safety procedures, conventional air spray systems, airless spray painting, and other spray systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing, and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2340 Blueprints II: Advanced Reading and Estimating

02 Semester Credits

Advanced instruction in principles and application of blueprint reading including terminology, architectural drawings, engineering drawings, and application of specifications and schedules to painting crafts.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1650 Blueprints I: Construction Fundamentals, or departmental approval.

ATPT-2350 Advanced Spray and Industrial Painting

02 Semester Credits

Advanced instruction in spray and industrial painting techniques and procedures including equipment terminology, conventional air spray systems, electrostatic spray systems, HVLP turbine spray systems, and safety for spray painting.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-2330 Spray and Industrial Painting, or departmental approval.

ATPT-2360 Foreman Training

02 Semester Credits

Instruction in foreman training including functions and responsibilities, communication skills, personnel duties, safety and substance abuse responsibilities, and legal requirements.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1300 Introduction to Painting, Drywall Finishing and Glazing, and ATPT-1320 Safety Standards for Construction (OSHA-10); or departmental approval.

ATPT-2370 Abrasive Blasting Techniques

02 Semester Credits

Instruction in abrasive blasting operations and procedures including types of machines and their components,

materials and their characteristics, selection of machine and materials to fit job, water blasting operations, and surface preparation with abrasive blasting.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-2320 Safe Work Practices or concurrent enrollment; or departmental approval.

ATPT-2380 Special Coatings and Decorative Finishes

02 Semester Credits

Instruction in basic principles and techniques of special coatings and decorative finishes including terminology and glazing, antiquing, wood graining, marbleizing, stipple finishing, texturing, gilding, and stenciling techniques and procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1630 Color Mixing and Matching, or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Pile Driving) - ATPD**

ATPD-1310 Technical Measurements, Hand & Power Tool Use in Pile Driving

02 Semester Credits

Introduction of safe use of pile driving tools. Topics include measurements, tool groups and tool applications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter apprentice program.

ATPD-1330 Print Reading for Pile Driving

02 Semester Credits

Introduction to blue print reading as it pertains to the Pile Driver. In depth discussion on line types, scale, views, and revision information. Use of optical tooling for layout also included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter apprentice program.

ATPD-1370 Pile Driving on Land and Water

02 Semester Credits

Introduction to basic pile types and applications. Topics include recognition and use of different types of hammers, pile families designs, structural characteristics, pile driving leads, required equipment and accessories, and pile driving on land and water.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter apprentice program.

ATPD-2020 Pile Driving Technologies**02 Semester Credits**

Advanced study of set up and breakdown of various cranes and equipment types. Includes identification of crane types, hardware & hitch usage, signals, and equipment capacities.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter apprentice program.

ATPD-2220 False Work and Heavy Timber**02 Semester Credits**

Efficient uses, advantages, disadvantages, and special considerations related to shoring methods. Examples of types of shoring equipment shown. Matching most efficient shoring system to application is also included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter Apprentice program.

ATPD-2370 Advanced Pile Driving on Land**02 Semester Credits**

In depth study of pile driving. Includes caissons and drilled shafts, tie back walls, cofferdams and cells, shoring and lagging, and fundamentals of geo-technical engineering and soil.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter Apprentice program.

ATPD-2380 Advanced Pile Driving on Water**02 Semester Credits**

In depth study of pile driving on water. Topics include sheet pile and caissons, auger cast pile, cofferdams, stone setting, and extraction.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATCT-1301 Introduction to Carpentry, and departmental approval: admission to Carpenter Apprentice program.

ATPD-2700 Millwright-Pile Driver Weld IV**02 Semester Credits**

Reinforcement of necessary skills required for large multi-pass welds. Preparation for A.W.S. D1.5 vertical up unlimited thickness certification test. Includes in-depth review of blueprint reading for welders.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATMW-2520 Millwright Pile Driver Weld III, and departmental approval: admission to Carpenter Apprentice program.

ATPD-2710 Millwright-Pile Driver Weld V**02 Semester Credits**

Advanced welding practices as applied to pile driving. GMAW topics include innershield welding, safe set up

and use of wire fed welding machines.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPD-2700 Millwright-Pile Driver Weld IV, and departmental approval: admission to Carpenter Apprentice program.

**APPLIED INDUSTRIAL TECHNOLOGY
(Pipefitting) - ATPF****ATPF-1070 Soldering Brazing and Pipefitting Tools****02 Semester Credits**

Covers the care and use of hand and power tools that are used in the pipefitting industry. In addition, safe soldering practices, alloys, joint preparation and soldering and brazing operations are included. Emphasis will be placed on the application process where the tools and equipment will be used.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1210 Rigging**02 Semester Credits**

A study of different materials used in the rigging process. Recognize a variety of knots and exhibit an ability to tie them. Includes crane operation and many alternate methods of determining load weights.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1220 Basic Pipefitting Layout**01 Semester Credits**

A study of basic layout for pipefitters and technicians in the construction industry. Covers calculations involved in designing, installing and repairing piping runs. Reviews basic mathematics for preparation in to succeed in problem solving found on the job.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1260 Sprinkler Layout**01 Semester Credits**

A study of layout for the sprinklerfitter and technicians in the construction industry. Covers calculations involved in designing, installing and repairing sprinkler piping runs. Review in basic mathematics for preparation of problem solving on the job.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1270 Sprinkler Drawings

04 Semester Credits

A study of sprinkler systems and techniques used to produce sprinkler drawings used by pipefitters in the construction industry. In addition, interpretation of fire suppression drawings and relative piping will be thoroughly addressed.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1360 Hydronic Heating and Cooling

02 Semester Credits

A study of hydronic heating and cooling systems used by pipefitters and service technicians in the construction industry. Course includes a discussion of various systems, equipment sizing, air control and installation techniques. Course includes a discussion of various systems, equipment sizing, air control and installation techniques and factors that affect chilled water equipment.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2340 Steam Systems

02 Semester Credits

Instructional course describing the proper installation, service and repair of steam piping systems in various commercial and industrial situations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2450 Oxy/Acetylene Cutting and Basic Welding I

02 Semester Credits

Introduction to oxy-acetylene flame cutting and Shielded Metal Arc Welding (SMAW) arc welding. Includes safe equipment assembly, layout & assembly of pipefittings and tacking & welding of pipefittings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship Program.

ATPF-2470 Oxy/Acetylene Cutting and Basic Welding II

02 Semester Credits

Covers proper technique of oxy-acetylene flame cutting and Shielded Metal Arc Welding (SMAW) arc welding. Includes safety precautions, simple flame cutting projects, and operation of various welding machines.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2510 Sprinkler Fire Protection

02 Semester Credits

Instructional course describing the proper installation, service and maintenance of sprinkler fire protection systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2520 Valve Repair

02 Semester Credits

Course describing the proper installation, service and repair of valves in various commercial, industrial and residential situations. Also includes proper selection of valves for each situation.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

**APPLIED INDUSTRIAL TECHNOLOGY
(Plumbing) - ATPL**

ATPL-1000 Care and Use of Tools

02 Semester Credits

Identifies the hand and power tools used in the plumbing industry and discusses the operation and respective safety concerns as prescribed in the standards found in the Occupational Safety and Health Administration (OSHA) and in the manufacturer's specifications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1010 Soldering and Brazing

02 Semester Credits

Basic principles of joining tubing used in domestic water and medical gas installations. In addition, discussion of the principles and practices used in soldering and brazing applications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1030 State of Ohio Plumbing Code I

02 Semester Credits

Introduction to the State of Ohio code for plumbing. Covers general regulations, definitions and specific installations including hot water tanks and storm water systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1040 Plumbing Heritage

02 Semester Credits

Introduction to labor history and the roles of the apprenticeship, apprentice, journey person, local union and union contractors in the construction industry. Also discusses good work habits and skills needed to excel in the construction industry.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1050 Construction Drawings for the Trades

02 Semester Credits

Covers residential blueprint reading as applied to mechanical and architectural trades. Includes sections explaining the use of various plans (site, foundation, floor) with building sections and details.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1060 Medical Gas

02 Semester Credits

Certification course that studies the installation, maintenance and safety concerns of medical gas and its environmental effects.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1070 Pipe Fittings, Valves, and Supports

02 Semester Credits

Identifies the pipe, pipe fittings, valves and supports that are used in the plumbing trade and discusses the fabrication and installation methods that are required for proper and safe installations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1210 State of Ohio Plumbing Code II

02 Semester Credits

A study of the State of Ohio Plumbing Code with concentration on governing provisions of venting materials, design, construction, and installation of venting systems. In addition, code provisions covering fixtures, faucets and fittings, special health care regulations, and indirect waste systems are included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1220 Gas Systems

02 Semester Credits

Study of the procedures followed in the installation of natural gas systems, pipe sizing, safety and the repair of

natural gas systems.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-1230 Water supply

02 Semester Credits

Overview of potable water from its source to its end use.

Includes discussion of water treatment, water mains, service and building water systems including water system layout, installation and maintenance, and different effects of the introduction of heat to potable water.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2320 State of Ohio Plumbing Code III

02 Semester Credits

Review of the State of Ohio Plumbing Codes I & II with the study of storm and sanitary drainage.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2350 Electricity for Plumbers

02 Semester Credits

Fundamentals of electricity for the plumbing trade. Covers safety, transformers, direct and alternating current, and basic controls. Discussion of motors and troubleshooting exercises.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2360 Green Plumbing Systems

01 Semester Credits

Fundamentals of sustainable design, green building practices and installation procedures that are used in the plumbing industry. Includes applied green awareness and function with respect to the conservation and recycling of potable water and the reuse of storm and sanitary water disposal systems.

Lecture 01 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2410 City and State Backflow Certification

02 Semester Credits

Preparation to test and repair various backflow prevention devices that are used to protect the public water supply.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2430 Trench and Excavation Safety/Confined Space

01 Semester Credits

Introduction to hazards and dangers of working in confined spaces. Examination of spaces with limited means of egress and limited natural ventilation that are not meant for continuous occupancy and examination of permit-required work areas with compliance to OSHA standards.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2440 City of Cleveland Plumbing License

01 Semester Credits

Certification course identifies the natural gases that are installed for application in the medical industry and discusses their environmental effects. Discussion of methods of installation and maintenance while addressing safety concerns with installations.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

ATPL-2510 Pumps

02 Semester Credits

Pumps, pump theory, and different systems used to pump various viscous liquids in plumbing systems. Reviews basic electricity and applies that knowledge to sequence of operations of pumping controls. Includes pump installation and alignment procedures and safety.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Plumbers' apprenticeship program.

ATPL-2550 Plumbing Service and Procedures

02 Semester Credits

Discusses the service division of the plumbing industry including customer service and salesmanship. Includes sections explaining maintenance and servicing of drains, faucets, valves and hot water tanks.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Plumbers' apprenticeship program.

ATPL-2560 Foreman Certification

02 Semester Credits

Discussion on the responsibilities of foremanship including leadership roles to the employer and to the respective labor organization. Covers methods of handling job and labor disputes using effective communication techniques, efficient work practices and attention to safety and consequences resulting from failure to do so.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Plumbers' apprenticeship program.

ATPL-2580 Design and Layout

02 Semester Credits

Utilization of residential and commercial drawings to identify mechanical areas within a structure where problem situations exist including conflicting elevations, illegal venting, interferences and others. In addition, writing "requests for information" (RFI's), and change work orders will be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Plumbers' apprenticeship program.

**APPLIED INDUSTRIAL TECHNOLOGY
(Sheet Metal Working) - ATSM**

ATSM-1010 Benefits Management

01 Semester Credit

The collective bargaining process, worker wages and benefits including hospitalization and pension plans including annuities. Also covered are membership investments, dues structure and personal money management.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1020 Trade History

01 Semester Credit

An introductory course covering the sheet metal industry and its history. Included is a discussion of the roles and responsibilities of the sheet metal worker.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1030 Layout and Fabrication I

02 Semester Credits

Introduces various techniques that are required to layout and fabricate fittings from sheet metal. In addition, the transferring of measurements from mechanical and shop drawings, to fabrication of metal, and safety in using tools and machinery for cutting metal will be discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1040 OSHA 16 Hour Safety Training

01 Semester Credits

Introduction to the Occupational Safety and Health Act (OSHA). Topics include employee responsibilities and rights, standards, and basic hazard training.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1210 Estimating and Bidding**01 Semester Credit**

Covers the estimating and bidding process used by contractors to justify costs and to be awarded contracts for sheet metal projects. Included is bid information, contract language and field costs.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1220 Layout and Fabrication II**02 Semester Credits**

Covers sheet metal layout and design applications in conjunction with parallel line and radial line development. Included are shop exercises involving applied math and geometric concepts that are required for calculating cut sizes for ductwork. Soldering techniques for assembling sheet metal patterns will also be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-1230 Field Installation**03 Semester Credits**

Covers the techniques required to layout, cut and fabricate components necessary to construct plenum boxes in heating and cooling systems installations. Included are applied math concepts for layout and cutting operations and drafting exercises.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2310 Refrigeration I**01 Semester Credit**

Introduces refrigeration theory, heat transfer, and the refrigeration cycle, including the piping of residential split systems using refrigeration tubing, with concentration on installation techniques including brazing and soldering. Also included are various layout procedures using mechanical and shop drawings.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2330 Layout and Fabrication III**03 Semester Credits**

Covers sheet metal layout, fabrication, and design applications in conjunction with the triangulation method of development. Included are shop exercises involving applied math, trigonometry, and geometric concepts that are required for calculating cut sizes for ductwork. Soldering techniques for assembling sheet metal patterns will also be covered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2340 Advanced Field Installation**03 Semester Credits**

Develop team building skills by engaging in a group exercise that requires interaction among the participants to design, construct, and install the required ductwork for a project in accordance with the parameters of tolerance within a designated work area. Develop a set of construction and mechanical drawings that are needed for this specific learning exercise.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2350 Duct Design and Testing**02 Semester Credits**

Covers duct configuration and design concepts including plenum requirements and aspect ratios covering air loss due to friction. Also included is a section on performing a system leak test.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2360 Load Calculations**01 Semester Credits**

Covers heating and air conditioning load calculations required for selecting the proper size equipment for various types of buildings. Included are sections dealing with heat transmission, design temperatures, and air infiltration.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's Apprenticeship program.

ATSM-2410 Residential Heating**03 Semester Credits**

Identifies the different types of heating systems, discusses the combustion process including fuel-air mixtures and atomization of fuel oil. Also covered are electrical circuitry, air circulation, controls and safety limits.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2420 Refrigeration II**02 Semester Credits**

Covers the components of refrigeration systems, applications to air conditioning and the use of specialty tools including vacuum pumps and gages. Installation methods, maintenance and troubleshooting are also covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2510 Commercial Roof Top Units

02 Semester Credits

Describes the different types of heating/air conditioning systems used on commercial buildings, including the use of specialty roof mounting systems. Also covered are electrical circuitry, air circulation, gas piping and optional accessories.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2520 Project Management

02 Semester Credits

Covers the leadership and motivational aspects of project management including contract administration, project organization and site supervision.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

ATSM-2530 Direct Digital Controls

02 Semester Credits

Covers the different types of electronic and pneumatic control circuits that are used in the heating and air conditioning industry. Included are sections covering control components, loops and applications and installation procedures. Advantages and disadvantages of using digital controls are also covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Sheet Metal Worker's apprenticeship program.

**APPLIED INDUSTRIAL TECHNOLOGY
(Sign and Display) - ATSD**

ATSD-1300 Introduction to Sign and Display

02 Semester Credits

Introduction to Sign and Display crafts. Includes sign and neon sign fabrication and erection; neon tube bending, service, and repair; sign manufacturing; sign and pictorial painting; color mixing and spray painting; sign and display tools, computer software; and trade show displays.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and Allied Trade Apprenticeship program, or departmental approval.

ATSD-1330 Hand Tools for Sign and Display

02 Semester Credits

Introduction to hand tools for sign and display, including basic hand tools; levels and transits; glass, plastic, and metal cutters; pliers, lifters, and tongs; punches, chisels, rivet guns, and taps.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and Allied Trade Apprenticeship program, or departmental approval.

ATSD-1620 Plastic Face Fabrication and Techniques

02 Semester Credits

Interpretation of drawings and work orders necessary to explain and perform plastic face fabrication and techniques, including safe and accurate use of Computer Numeric Control/Computer Aided Systems (CNC/CAS), vacuum/form and press, various hand and power tools used with substrates, plastic materials, and preparation of molds to final sign production.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to Painters and Allied Trade Apprenticeship program, or departmental approval.

ATSD-2330 Sign Lighting and Wiring

02 Semester Credits

Interpretation of drawings and study of electrical theory to perform sign lighting and wiring, including knowledge of materials, industry standards and codes, fluorescent lighting, and use of tools to wire, install, and test sign lighting components.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1320 Safety Standards for Construction (OSHA-10), or departmental approval.

ATSD-2340 Advanced Welding

02 Semester Credits

Instruction in advanced welding. Includes oxy-acetylene, gas, metal inert gas (M.I.G.), tungsten inert gas (T.I.G.), and shielded metal arc welding (S.M.A.W.) welding processes; welding of cast iron, aluminum, copper alloys, and stainless steel; hardfacing; and the use of oxy-acetylene torches.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATGL-1630 Basic Welding or concurrent enrollment, or departmental approval.

ATSD-2350 Structural Steel and Support Fabrication

02 Semester Credits

Interpretation of drawings and work orders; use of tools and equipment for the fabrication and assembly of supports for signs and displays; and building jigs, welding, bolting, and painting.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATGL-1630 Basic Welding, or departmental approval.

ATSD-2360 Computerized Manufacture of Signs**02 Semester Credits**

Instruction in computer skills for vinyl sign manufacturing. Includes overview of drawing software, such as Gerber Graphix Advantage, Scanvek, and Corel DRAW; creating logos, calendars, labels, and posters; new features in drawing programs; exporting to sign programs; and creating a portfolio.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1630 Color Mixing and Matching, or departmental approval.

ATSD-2370 Letter Fabrication**02 Semester Credits**

Procedures used in letter fabrication, including interpreting drawings and work orders, measurements and layout of letters and templates, and use of tools and fasteners.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATSD-1620 Plastic Face Fabrication and Techniques, and ATSD-2330 Sign Lighting and Wiring, or departmental approval.

ATSD-2390 Advanced Blueprints for Sign and Display**02 Semester Credits**

Study of advanced blueprints including terminology, types of drawings, specifications and schedules, lines, symbols, scales, dimensions, and uses for sign and display work.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATPT-1650 Blueprints I: Construction Fundamentals, or departmental approval.

ATSD-2460 Computerized Sign Design**02 Semester Credits**

Instruction in computer skills for vinyl sign design. Includes overview, tools, and use of computerized sign designing software; creating logos; scanning images; retouching photos; saving files to sign software; outputting files to vinyl; and creating a portfolio.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ATSD-2360 Computerized Manufacture of Signs or concurrent enrollment, or departmental approval.

**APPLIED INDUSTRIAL TECHNOLOGY
(Teledata) - ATTC****ATTC-1340 AC Circuits/Telephony****03 Semester Credits**

Study of fundamentals of alternating current (AC), basic transformer principles, telephone networks and circuitry.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Teledata apprenticeship program.

ATTC-1350 Premises Cabling**03 Semester Credits**

Introduction to premises cabling and the Telecommunications Industry Association/Electronics Industry Association (TIA/EIA) standards and codes. Topics include troubleshooting structured cabling systems and the connectors and hardware used in installation and upkeep as well as performance of the system.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Teledata apprenticeship program.

ATTC-1360 Network Cabling**03 Semester Credits**

Study of network cabling and standards. Topics include local area network (LAN) fundamentals and standards, an overview of the entire structured cabling system, Ethernet LAN cabling and topologies, and token ring LAN cabling and topologies.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Teledata apprenticeship program.

ATTC-2300 Advanced Telecommunications**04 Semester Credits**

Advanced study of electronic components as well as security systems, smoke detectors, pagers, locks, sensors, and doors. Installation and troubleshooting included using guided instruction and practice.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ATTC-1340 AC Circuits/ Telephony or concurrent enrollment, or departmental approval: admission to Teledata apprenticeship program.

ART - ART**ART-1010 Art Appreciation****03 Semester Credits**

Introduction to the nature, vocabulary, media, and history of art as well as an examination of art's themes and purposes, visual elements, and principles of design.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

ART-1040 Survey of Non-Western Art**03 Semester Credits**

Provides a stylistic and historical overview of indigenous visual arts in Africa, India, Indian Surround, China, Japan, Oceania, South America, Mesoamerica, and Native North America.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

ART-1050 Drawing I**03 Semester Credits**

Introduces basic drawing methods, media and concepts. Studio experiences emphasize drawing from observation and the development of line, mass, proportion, negative/positive space and shape, composition, light, relative values, and perspective. Historical precedents are discussed, master works analyzed, and relevant practical information is assimilated into the flow of class assignments.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): None.

WAN Approved: OAH001

ART-1060 Drawing II**03 Semester Credits**

Further development of observational and conceptual drawing skills. Emphasis is on spatial, structural and compositional concepts. Introduces color media and develops additional drawing strategies to meet situations demanding advanced skills. May be repeated for up to nine credits, three of which are applicable to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1050 Drawing; or departmental approval: comparable skills.

ART-1070 3D Foundations**03 Semester Credits**

Study of the elements of three-dimensional visual design and their application in creative expression. Recommended for students taking art related courses and programs that emphasize three-dimensional investigations.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): None.

WAN: OAH004

ART-1080 Visual Design I**03 Semester Credits**

Study of the two-dimensional design elements and principles of organization needed to create a foundation in visual communication. Traditional media and computer assisted sections available.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): None.

WAN Approved: OAH003

ART-1091 Color Theory and Application**03 Semester Credits**

Study visual design principles of color theory. Explore spatial, emotional, perceptual and optical properties of color organization. Use color as an effective tool in visual communication of concept. Additional work outside of class required to create a quality portfolio to use for

transfer to a four/five year school or to seek employment. Traditional media and computer assisted sections available.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): None.

ART-1100 Sculpture I**03 Semester Credits**

Introduction to sculptural forms, materials, and processes. Application of three-dimensional design principles to given spatial problems. Overview of historic significance of sculpture. Projects may vary with classroom facilities at each campus.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1070 3D Foundations; or departmental approval: comparable course.

WAN Approved: OAH047

ART-1200 Calligraphy**03 Semester Credits**

Study and execution of letter forms and scripts from various cultural systems of writing. Understanding inherent beauty of scripts as graphic design elements. May be taught using hand or computer skill development.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): None.

ART-1500 Art for Elementary Education**03 Semester Credits**

Basic art education theory and practice in visual arts for elementary education majors. Emphasis on integration of visual arts disciplines with other subjects in elementary curriculum.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

ART-1600 Introduction to Art Therapy**03 Semester Credits**

Introduction to basic concepts of art as therapy, provide an overview of the origins, theories, and foundations of art therapy. Students will be exposed to a variety of art media and major readings in the field utilizing art as a means of communication. Artistic talent is not required for this course.

Note: Certification at the professional level in Art Therapy requires appropriate work experience and a master's degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets AATA (American Art Therapy Association) prerequisite requirements for entering a master's program in Art Therapy.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

ART-1610 Art Therapy II: Methods and Media**03 Semester Credits**

Explore theories of art therapy and their affect on the delivery of services. Student groups experience art therapy methods and media. Heighten the student's awareness of personal goals and expectations for entering the art therapy profession, and deepen the student's understanding of the creative process. Connect the student with his/her creative potential through studio experiences.

Note: Certification at the professional level in Art Therapy requires appropriate work experience and a master's degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets AATA (American Art Therapy Association) prerequisite requirements for entering a master's program in Art Therapy.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ART-1600 Introduction to Art Therapy, and PSY-1010 General Psychology; and PSY-2050 Psychology of Personality, or concurrent enrollment.

ART-1700 Ceramics I**03 Semester Credits**

Fundamentals of basic hand building methods, glazing and decorative techniques by creating forms of increasing complexity. Broad survey of ceramic history.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): None.

OAN Approved: OAH050

ART-179H Honors Contract in Art**01 Semester Credit**

Honors Contract complements and exceeds requirements and objectives for an existing ART 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, student is required to meet on a regularly scheduled basis

with instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of six credits of different topics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Art, whose instructor approves the Honors Contract.

ART-2000 Life Drawing I**03 Semester Credits**

Introduction to drawing the human figure from a live model. Emphasis is on gesture drawing to accurately establish the proportion and pose of the figure. The elements of line and value are used to describe form, structure and space. Anatomy for artists is introduced. Various media are explored.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.

OAN Approved: OAH051

ART-2010 Life Drawing II**03 Semester Credits**

Continued exploration of drawing the human figure from a live model. Emphasizes anatomy lessons to portray human structure and to explore the figure's expressive nature. Craftsmanship and proficiency with various media are stressed. Control of gesture and proportion, and the representation of foreshortened forms within a three-dimensional environment will be examined. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-2000 Life Drawing I, or departmental approval: comparable skills.

ART-2020 Art History Survey: Prehistoric to Renaissance**03 Semester Credits**

A stylistic and historical overview of the visual arts in western culture from inception to the fifteenth century including: Prehistoric, Egyptian, Ancient Near Eastern, Greek, Etruscan, Roman, Byzantine, Early Medieval Monastic, Carolingian and Ottonian, Romanesque, Gothic, Fourteenth-Century Art in Italy, Fifteenth-Century Art in Northern Europe and Spain, and the Early Renaissance in Italy.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment.

OAN Approved: OAH005 (course 1 of 2, both must be taken.)

ART-2030 Art History Survey: Late Renaissance to Present**03 Semester Credits**

A stylistic and historical overview of the visual arts in western culture from the sixteenth century through today including Italian Renaissance, Mannerism, Sixteenth Century Art in Northern Europe and Spain, Baroque and Rococo, Neoclassicism and Romanticism, Nineteenth, Twentieth, and Twenty-First Centuries Art in Europe and the United States.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

OAN Approved: OAH005 (course 2 of 2, both must be taken)

ART-2050 Painting I**03 Semester Credits**

Introduction to materials and techniques of opaque painting (oil and acrylic). Emphasis on use of color, composition and other perceptual concerns. Exploration of various styles of painting.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1050 Drawing I or departmental approval: comparable skills.

OAN Approved: OAH048

ART-2060 Painting II**03 Semester Credits**

Exploration of more advanced painting problems utilizing various subjects and styles. Emphasis placed on personal expression and independent problem-solving skills. Focus on craftsmanship and a high level of proficiency with opaque painting media. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-2050 Painting I or departmental approval: comparable skills.

ART-2070 Watercolor**03 Semester Credits**

Introduction and exploration of transparent watercolor as painting technique. Investigates various styles of painting. May be repeated for up to 9 credits, but only 3 credits are applicable to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1050 Drawing I, or departmental approval: comparable skills.

ART-2080 Portrait Drawing and Painting**03 Semester Credits**

In-depth study of drawing and painting portraits from live models. The focus will be on facial anatomy and relating the model to three-dimensional environment. The psychological aspects of portraiture will also be explored. Various media will be utilized throughout the course. May be repeated up to 9 credits; only 3 credits may be applied to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1050 Drawing I or departmental approval: comparable skills.

ART-2100 Computer Graphic: Raster Images**03 Semester Credits**

Study raster (paint) software tools for graphic design and expressive images. Techniques relating to demands in current market include scanning, processing and compositing of images. Interactive digital portfolio output. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements. New software options available as course is repeated.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1080 Visual Design I (computer aided), or ART-1091 Color Theory and Application (computer aided), or departmental approval: comparable skills.

ART-2110 Computer Graphic: Drawing**03 Semester Credits**

Study 2D vector object construction for graphic design images. Develop precision in Bezier curve manipulation, hand drawn images are scanned in, traced or streamlined into vector information. Filters humanize the mathematical hard edges of images. Interactive digital portfolio output. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements. New software options are available as course is repeated.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1080 Visual Design I (computer aided), or ART-1091 Color Theory and Application (computer aided), or departmental approval: comparable skills.

ART-2151 Animation for Web and Media**03 Semester Credits**

[This course is cross-listed as VCIM-2270. Credit can only be applied to degree requirements once for either course.] Technical and aesthetic fundamentals of 2D animation as they pertain to the Internet. Use of current software to develop interactive, animated graphics and interfaces. Various techniques including tweening, frame by frame, onion skinning, shape and color morphing as well as non-linear structure, interactivity, communication, scripting and troubleshooting. Acquisition or creation and integration of music, sound and video. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1080 Visual Design I or ART-1091 Color Theory and Application or VC&D-1015 Digital Studio Basics or departmental approval: comparable skills.

ART-2180 Sculpture II**03 Semester Credits**

Emphasis on independent concept development, meaningful connection to material choices, and contemporary concerns in sculpture, including social and environmental issues. Projects may vary with classroom facilities and resources at each campus. To advance skills, it may be repeated for up to 9 credits, 6 of which are applicable to Tri-C degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1100 Sculpture I, or departmental approval: comparable skills.

ART-2190 Ceramics II**03 Semester Credits**

Focus on wheel throwing skills and advanced hand building techniques in the creation of three-dimensional forms. Formal and functional design. Introduction to kiln firing and ceramic materials in clay and glaze formulation. To advance skills, course may be repeated for up to 9 credits, 6 of which are applicable to Tri-C degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1700 Ceramics I, or departmental approval: comparable skills.

ART-2210 Printmaking I**03 Semester Credits**

Introduction to various aspects of printmaking and graphic composition. Techniques include relief printing (wood/linocut, monotype); intaglio (etching, engraving, dry point, mezzotint, aquatint); calligraphy, monoprint and multi-color work.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1050 Drawing I, or departmental approval.

OAN Approved: OAH049

ART-2220 Printmaking II**03 Semester Credits**

Continuation of advanced printmaking techniques such as intaglio, relief, lithography, serigraphy, calligraphy and/or monoprints. May be repeated for up to 9 credits; 3 of which are applicable to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-2210 Printmaking I, or departmental approval: comparable skills.

ART-2300 Art Therapy III: Approaches and Technique**03 Semester Credits**

An examination of various techniques used by therapists. Studio Exposure work is used as a tool to understand and cultivate the discipline of self-awareness. Students must participate in site visits for observation and interviewing of a professional art therapist.

Note: Certification at the professional level in Art Therapy requires appropriate work experience and a master's degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets AATA (American Art Therapy Association) prerequisite requirements for entering a master's program in Art Therapy.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ART-1610 Art Therapy II: Methods and Media, and PSY-1010 General Psychology, and PSY-2050 Psychology of Personality.

ART-2310 Art Therapy Studio: Basic Therapeutic Skills**03 Semester Credits**

Provides a directed self-study process and fosters development of professional helping skills through observation, participation and research. Attention given to creating a safe therapeutic environment involving the emotional, physical, spiritual and cultural aspects of clients. Cover theoretical and clinical dimensions of art therapy and interventions. Provides additional experience with various art therapy media.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ART-2300 Art Therapy III: Approaches and Technique, and PSY-1010 General Psychology, and PSY-2050 Psychology of Personality; and PSY-2080 Abnormal Psychology or concurrent enrollment; or departmental approval.

Note: Certification at the professional level in Art Therapy requires appropriate work experience and a master's degree from an approved graduate program. This course provides the undergraduate student foundational knowledge in Art Therapy and meets AATA (American Art Therapy Association) prerequisite requirements for entering a master's program in Art Therapy.

ART-2790 Portfolio Development

01 Semester Credit

Covers development and presentation of an art portfolio. Define intent and focus of portfolio. Emphasize basic visual language skills and individual creative strengths. Students edit and modify work where required. Add new pieces that meet expected portfolio standards for transfer and job market. The course will include: selection and development of best format for presentation of their work, resume formats and development of a self-promotional piece.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Sufficient quantity of successfully completed work for portfolio inclusion.

ART-279H Sophomore (Second-year) Honors Contract in Art

01 Semester Credit

Sophomore Honors Contract in Art complements and exceeds requirements and expected outcomes for an existing Art 2000-level course (not an honors course) through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract that upon completion will result in distinctive scholarship appropriate to honors 2000-level. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. A maximum of six Honors Contracts (six credits) may be taken at the College (includes 179H and 279H).

Lecture 00 hours. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 2000-level course (not an honors course) in Art, whose instructor agrees to mentor the student in the sophomore honors contract.

Departmental approval required.

AUTOMOTIVE TECHNOLOGY - AUTO

AUTO-1001 Automotive Maintenance and Consumer Issues

02 Semester Credits

Designed to teach automotive maintenance and introduce vehicle systems and components to the automobile owner. Introduction to brake, electrical, suspension, fuel, and cooling systems and their terminology. Examine consumer issues concerning automotive maintenance and automotive repair facilities, and purchase of new and used vehicles. Minimal hands-on application.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

AUTO-1010 Shop Safety and Lab Procedures

01 Semester Credits

Safe working conditions in an automotive shop requires knowledge and awareness of potential vehicle, shop equipment, chemical, and environmental hazards.

Personal aspect, protective equipment, tool and equipment use, proper lifting of vehicles, fires and hazards, and chemical containment and disposal are reviewed.

Procedures for obtaining tools from the tool room, and pulling in and out vehicles at the Western campus Auto Tech Center are explained.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

AUTO-1050 Numerical Applications in Automotive Service

03 Semester Credits

Use of numerical concepts and principles in interpreting, assessing, and determining need for automotive repair. Whole numbers, decimals, fractions, integers, graphs, ratios and percentages used to evaluate engine, electrical, chassis and HVAC system operation. Customary and metric conversions, reading automotive measuring devices and auto service repair order computations reviewed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

AUTO-1100 Introduction to Automotive Service Procedures

02 Semester Credits

Designed to provide introduction to several basic service procedures required of person beginning work in automobile service center. Oil change, transmission service, tire service, thread repair, cooling system service, safety inspection, battery testing will be demonstrated and practiced after introduction to shop safety and safe operation of automobile equipment and hand tools. May require visits to automotive service centers.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

AUTO-1300 Automotive Engines

03 Semester Credits

Operation of internal combustion gasoline engine including engine fundamentals and removal, lubrication and cooling system operation, and cylinder head and engine block diagnosis. Engine disassembly, measurements for correctness, proper assembly techniques and gasket and sealing information included.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): None.

AUTO-1350 Manual Transmission and Drivetrain

02 Semester Credits

Theory and operation of manual transmissions, transaxles, clutches, drive shafts, drivetrain couplings, differentials, rear axles, axle shafts, and four-wheel drive componentry. Laboratory skills emphasize diagnosis, troubleshooting and repair.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): None.

AUTO-1400 Automotive Alignment, Steering and Suspension**03 Semester Credits**

Theory and principles of automotive alignment geometry and automotive steering and suspension systems. Laboratory competencies integrate diagnosis and repair of these systems through the use of special tools and alignment equipment.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

AUTO-1450 Automotive Braking Systems**03 Semester Credits**

Designed to provide student with foundation in theory and operation of automotive braking systems. Includes hydraulic brake principles, machining operations, and troubleshooting and repair of disc and drum brake assemblies. Operation and diagnosis of anti-lock braking systems included.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

AUTO-1501 Automotive Electrical Fundamentals**02 Semester Credits**

Fundamentals of electricity for automotive technicians. Electrical theory applied through construction of series, parallel and series-parallel circuits. Digital Volt Ohm Meter (DVOM) use in electrical diagnosing and testing of circuits covered, along with wire repair techniques. Emphasis on interpreting and using automotive electrical wiring schematics. Horn and wiper systems examined.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): None.

AUTO-1940 Automotive Field Experience I**01 Semester Credit**

Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 clock hours per week.

Prerequisite(s): Departmental approval: job site approval.

AUTO-1950 Automotive Field Experience II**01 Semester Credit**

Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 clock hrs per week.

Prerequisite(s): Departmental approval: job site approval.

AUTO-1960 Automotive Field Experience III**01 Semester Credit**

Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 clock hrs per week.

Prerequisite(s): Departmental approval: job site approval.

AUTO-2300 Automatic Transmissions**03 Semester Credits**

Operation of automotive transmissions and transaxles. Emphasis on knowledge and skills needed to properly diagnose transmission faults related to hydraulic, mechanical, and electrical systems that effect transmission operation. Specifics covered in this course include transmission operation, diagnostic, and service procedures, hydraulic fundamentals, controls and planetary gear train theory. Maintenance, diagnosis, inspection, overhaul proper assembly techniques of transmissions are included.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): AUTO-1501 Automotive Electrical Fundamentals.

AUTO-2350 Automotive HVAC**02 Semester Credits**

Theory, diagnosis and servicing procedures of automotive air conditioning systems. Includes heating systems and operation, diagnosis and repair of electric and vacuum components and controls, and service procedures for R-12 and R-134A refrigerants.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): AUTO-1501 Automotive Electrical Fundamentals; or departmental approval: Industry related experience.

AUTO-2400 Engine Performance**03 Semester Credits**

Fundamentals of proper engine performance. Ignition, electrical, engine mechanical, and fuel and emission system principles of operation, related driveability symptoms, and proper testing to verify cause will be explored. DVOM, scan tool and special tools used throughout course. Emphasis on operational concepts and individual component testing.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): AUTO-1300 Automotive Engines and AUTO-1501 Automotive Electrical Fundamentals; or departmental approval: industry-related experience.

**AUTO-2450 Automotive Electronic Engine Controls
03 Semester Credits**

Operation and advanced diagnosis of modern automobile ignition, electrical, engine mechanical, and fuel and emission control systems which are computer controlled. Explore methods of analyzing and locating engine performance malfunctions using deductive methodology and diagnostic test equipment. Emphasis on OBD II software, in-depth scan tool usage, five-gas analysis, and digital scope signal analysis.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): AUTO-2400 Engine Performance; or departmental approval: industry related experience.

**AUTO-2470 Automotive Electrical Systems
02 Semester Credits**

Integrates operational principles and diagnostic skills needed to repair various vehicle electrical systems utilizing electrical concepts and schematics. Charging and starting systems, including interrelated security systems, primary ignition, supplemental restraint (SRS) and lighting systems, are explained and analyzed. Laboratory practice provides student applied knowledge for troubleshooting these systems.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): AUTO-1501 Automotive Electrical Fundamentals.

**AUTO-2500 Automotive Electrical Diagnosis
02 Semester Credits**

Problem-based learning to develop diagnostic skills needed to repair various automotive electrical systems and accessories. Laboratory practice focuses on techniques for diagnosing and troubleshooting any automotive electrical circuit.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): AUTO-2470 Automotive Field Electrical Systems, or departmental approval: industry-related experience.

**AUTO-2600 Hybrids and Alternative Fuel Systems
03 Semester Credits**

Focus examination on the fundamentals and operation of automotive hybrid vehicles. Current alternative fuel systems examined, including flexible fuel, electric, and fuel cell vehicles. Analysis of alternative fuels, including propane, natural gas, ethanol, methanol, biodiesel, and hydrogen, reviews benefits and limitations. Lecture only course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): AUTO-1501 Automotive Electrical fundamentals, or departmental approval.

**AUTO-2650 Hybrid Vehicle Safety and Service
03 Semester Credits**

Working safely with hybrid vehicles is reviewed and practiced. Advantages and disadvantages of various battery types, hybrid designs and electric motors are examined. Hands on course utilizes scan tools and

diagnostic process to analyze and troubleshoot hybrid vehicles.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): AUTO-1501 Automotive Electrical Fundamentals, or departmental approval.

**AUTO-2701 Automotive Service Operations
03 Semester Credits**

Staffing and personnel selection, customer relations, consumer laws, expense control, repair facility site selection, hiring/firing legal issues, advertising and other business concerns dealing with an automotive repair facility are examined. Daily operations, business analysis and marketing for an automotive garage are explored with auto service computer software.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or departmental approval.

**AUTO-2940 Automotive Field Experience IV
01 Semester Credit**

Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 clock hours per week.

Prerequisite(s): Departmental approval: job site approval.

**AUTO-2950 Automotive Field Experience V
01 Semester Credit**

Capstone course in automotive technology. Provides student with automotive field experience needed to develop career skills through work experience in automotive service industry.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 clock hours per week.

Prerequisite(s): Departmental approval: job site approval.

BIOLOGY - BIO**BIO-1040 The Cell and DNA
03 Semester Credits**

Designed for non-science majors. Considers cell structure, function, and metabolism, cell division, DNA structure and function, Mendelian and molecular genetics. Scientific method and reasoning emphasized. To fulfill laboratory science requirements, students should enroll in the related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG 1010 College Composition I.

BIO-104L The Cell and DNA Laboratory**01 Semester Credit**

Laboratory course examines scientific method, cell structure and function, cell division, DNA structure and function, and Mendelian and molecular genetics. Includes microscope work, models, role play and various experiments designed to illustrate concepts covered in the lecture course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in BIO-1040 The Cell and DNA is strongly recommended.

BIO-1050 Human Biology**03 Semester Credits**

Designed for non-science majors. Considers concept of homeostasis of the human body. Basic structure and function of body systems and diseases of these systems studied. To fulfill laboratory science requirements, students should enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG 1010 College Composition I.

BIO-105L Human Biology Laboratory**01 Semester Credit**

Laboratory course examines structure and function of human body systems. Includes microscope work, models, computer applications, and animal dissection.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in BIO-1050 Human Biology is strongly recommended.

BIO-1060 Environment, Ecology, and Evolution**03 Semester Credits**

Designed for non-science majors. Questions about the natural world are explored through an introduction to the principles of evolution and ecology, including how populations change over time and how organisms interact with each other and the environment. Topics include scientific inquiry; nature of science; evolutionary processes; diversity of life; population, community, and ecosystem ecology; human impacts on the environment; environmental stewardship; and regional environmental concerns.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG 1010 College Composition I.

BIO-106L Environment, Ecology, and Evolution Laboratory**01 Semester Credit**

Designed for non-science majors. Questions about the natural world are explored through hands-on laboratory and field activities focusing on evolution, ecology, and environmental science. Scientific inquiry is used to investigate how populations change over time; the diversity of life; community ecology; ecosystem ecology; and human impacts on the environment.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in BIO-1060 Environment, Ecology, and Evolution is strongly recommended.

BIO-1100 Introduction to Biological Chemistry**03 Semester Credits**

Basic principles of inorganic chemistry, organic chemistry and biochemistry necessary for study of human physiology. Physiological applications of the chemical processes of cellular transport, communication and metabolism emphasized. Laboratory includes use of metric system, basic chemistry techniques and physiological applications.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Eligibility for MATH-1060 Survey of Mathematics or higher.

BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging**04 Semester Credits**

Basic understanding of body systems, structures and organs based on functions and relationships to diagnostic medical imaging examinations.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MA-1020 Medical Terminology I or concurrent enrollment.

BIO-1230 Anatomy and Physiology of the Eye**04 Semester Credits**

Detailed examination of the anatomy and physiology of the eye. Emphasis on eye terminology, structure, function, movement, disorders, diseases, lens physics, and visual testing/analysis. Study of eye model and preserved eye dissection.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: admission to Optical Technology program.

BIO-1300 Horticultural Botany**03 Semester Credits**

[This course is cross-listed as PST-1300. Credit can only be earned once for either course.]

Plant terminology, taxonomy, histology, anatomy, morphology, and physiology are examined. Emphasis on horticultural practices, plant growth principles, and cultural requirements for plant growth.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): ENG-0990 Language Fundamentals II, or eligibility for ENG-1010 College Composition I.

BIO-1410 Anatomy and Physiology of Domestic Animals I**04 Semester Credits**

Explores the comparative anatomy and physiology of the canine, feline, equine, bovine, ovine, and porcine species. Focuses on cellular biology, tissues and membranes, the integumentary, skeletal, muscular, nervous, endocrine, and circulatory systems and emphasizes species variations. Laboratory includes preserved and fresh specimens, models, microscopic observations, and audio/visual aids.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): BIO-1100 Introduction to Biological Chemistry or concurrent enrollment; or CHEM-1010 Introduction to Inorganic Chemistry, or concurrent enrollment; or departmental approval: comparable knowledge or skills.

BIO-1420 Anatomy and Physiology of Domestic Animals II**03 Semester Credits**

Explores the comparative anatomy and physiology of the canine, feline, equine, bovine, ovine, and porcine species. Focuses on lymphatic, digestive, respiratory, urinary and reproductive systems. Immunology, pregnancy, lactation and genetics considered. Laboratory includes preserved and fresh specimens, models, microscopic observations, and audio/visual aids.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): BIO-1410 Anatomy and Physiology of Domestic Animals I.

BIO-1500 Principles of Biology I**04 Semester Credits**

Designed for science majors. The molecular and cellular basis of life is explored through an introduction to cell biology, molecular biology, genetics, and evolution in both lecture and laboratory settings. Topics include scientific inquiry; chemical aspects of life; cell structure and function; energy and metabolism; cell division; molecular genetics; inheritance; population genetics; mechanisms of evolution; and evidence for evolution.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I and Eligibility for MATH 1000 level or higher.

UAN Approved: OSC003

BIO-150H Honors Principles of Biology I**04 Semester Credits**

Honors Course designed for science majors with exploration of the molecular and cellular basis of life through an introduction to cell biology, molecular biology, genetics and evolution with a strong focus on inquiry-based learning as the basis of scholarly research. Emphasis on evolution as the unifying theory in biology.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): ENG-1010 College Composition I with grade of "B" or higher; or ENG-101H Honors College Composition I; and eligibility for MATH 1000 level or higher.

UAN Approved: OSC003

BIO-1510 Principles of Biology II**04 Semester Credits**

Designed for science majors. The diversity of life, animals, plants, and ecology are explored in both lecture and laboratory settings. Topics include the origin and evolution of life, systematics, classification, structural and functional variations in animals and plants, populations, communities, and ecosystems.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): BIO-1500 Principles of Biology I, or BIO-150H Honors Principles of Biology I, or departmental approval.

UAN Approved: OSC004

BIO-151H Honors Principles of Biology II**04 Semester Credits**

Honors course designed for science majors. The diversity of life, animals, plants, and ecology are explored in both lecture and laboratory settings. Topics include the origin and evolution of life, systematics, classification, structural and functional variations in animals and plants, populations, communities, and ecosystems. Emphasis on evolution as the unifying theory in biology. Strong focus on inquiry-based learning.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): BIO-150H Honors Principles of Biology I or BIO-1500 Principles of Biology I.

BIO-1700 Introduction to Biotechnology**03 Semester Credits**

Designed for science majors interested in a biotechnology career. History and fundamental principles of biotechnology, including molecular biological, genetic, and immunological foundations. Theory and practice of recombinant DNA methodologies highlighted. Past, present and promising future applications of biotechnology. Ethical, political, and economic impacts of biotechnology, including patents, presented.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1500 Principles of Biology I and CHEM-1010 Introduction to Inorganic Chemistry.

BIO-2010 Field Botany**03 Semester Credits**

Study of the plant kingdom, emphasis on collection, identification, classification and ecology of local flora. Field trips required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Completion of any 1000-level science course.

BIO-2020 Tropical Biology**04 Semester Credits**

Introduction to biology of the tropics. Topics include major tropical biomes, biodiversity, conservation, sustainability, and consequences of human impact on the tropics. Studies include identification of flora and fauna and adaptations of tropical organisms. In addition to on-campus lecture/lab during an academic term, students are required to participate and travel to a tropical location for a real-world learning experience. Field trip requires additional costs.

Lecture 03 hours. Laboratory 03 hours.

Other Required Hours: A portion of the laboratory hours will be completed during the mandatory field trip to a tropical ecosystem.

Prerequisite(s): Departmental approval and any 1000 level science course.

BIO-2050 Field Zoology**03 Semester Credits**

Study of the animal kingdom, emphasis on location, identification, classification and ecology of local fauna. Field trips required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Completion of any 1000-level science course.

BIO-2060 Principles of Genetics**03 Semester Credits**

Study of principles of genetics with emphasis on human inheritance. Classical Mendelian genetics, the molecular basis of inheritance, current applications of genetic techniques, and the human genome project emphasized. Genetic basis of immunology and cancer explored.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-2341 Anatomy and Physiology II, or BIO-1420 Anatomy and Physiology of Domestic Animals II, or BIO-1500 Principles of Biology I.

BIO-2070 Techniques in Molecular Genetics**03 Semester Credits**

Advanced study of structure and function of DNA with emphasis on laboratory techniques used in molecular biology. Laboratory practices and applications of sterile techniques, gel electrophoresis, DNA isolation, RFLP analysis, plasmids, and recombinant DNA. Protein structure and methods of protein purification explored.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-2341 Anatomy and Physiology II, or BIO-1500 Principles of Biology I.

BIO-2100 Biology of Aging**03 Semester Credits**

Multidisciplinary approach to biological theories of aging with emphasis on humans. Fundamental concepts of cell biology and physiology will be used to study extrinsic and intrinsic factors in aging, the effects of aging on body

systems, senescence, genetics, life expectancy and life span, and improving survivorship.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-1050 Human Biology, or BIO-1500 Principles of Biology I, or BIO-2331 Anatomy and Physiology I.

BIO-2150 Environmental Science**03 Semester Credits**

Fundamental ecological concepts and their application to environmental issues emphasizing the impact of human activity on the biosphere. Topics include natural resources, air, water and land pollution, energy, and populations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1060 Environment, Ecology and Evolution; or BIO-1510 Principles of Biology II.

BIO-2200 Radiobiology**02 Semester Credits**

Theories of the biological effects of ionizing radiation, quantities and units of measurement, proper protective measures for patient and personnel, effective dose equivalents radiation absorption processes and shielding, exposure monitoring devices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging and departmental approval: admission to the Radiography program.

BIO-2331 Anatomy and Physiology I**04 Semester Credits**

Study of structure and function of human body. Focus on fundamental concepts of cellular structure, tissues, organs, and systems. Considers structure, function, and terminology of skeletal, muscular, integumentary, nervous and endocrine systems. Laboratory experiences include demonstrations, microscopic observations, anatomic models, and videos related to topics.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): Sufficient score on Biology Placement Test or BIO-1100 Introduction to Biological Chemistry; or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry, or BIO-1500 Principles of Biology I.

BIO-233A Anatomy and Physiology I: Skeletal and Muscular Systems**02 Semester Credits**

Study of structure and function of human body. Focus on fundamental concepts of cellular structure, tissues, organs, and systems. Considers structure, function, and terminology of skeletal and muscular systems. Laboratory experiences include demonstrations, microscopic observations, anatomic models, and videos related to topics.

Lecture 1.5 hours. Laboratory 1.5 hours.

Prerequisite(s): Sufficient score on Biology Placement Test or BIO-1100 Introduction to Biological Chemistry; or CHEM-1010 Introduction to Inorganic Chemistry and CHEM-1020 Introduction to Organic Chemistry and Biochemistry.

BIO-233B Anatomy and Physiology I: Nervous, Integumentary, and Endocrine Systems**02 Semester Credits**

Study of structure and function of the human body. Focus on structure, functions, and terminology of the nervous, integumentary, and endocrine systems. Laboratory experiences include demonstrations, microscopic observations, anatomic models, and videos related to topics.

Lecture 1.5 hours. Laboratory 1.5 hours.

Prerequisite(s): BIO-233A Anatomy and Physiology I: Skeletal and Muscular Systems or BIO-2330 Anatomy and Physiology I.

BIO-2341 Anatomy and Physiology II**04 Semester Credits**

Study of structure and function of the human body. Considers structure, function, and terminology of cardiovascular, lymphatic, respiratory, urinary systems, digestive and reproductive system. Immunology, cellular division, embryological and fetal development, classical genetics and genetic technology considered. Laboratory experiences include demonstrations, microscopic observations, anatomic models, and videos related to topics.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I; or BIO-233A Anatomy and Physiology I: Skeletal and Muscular Systems and BIO-233B Anatomy and Physiology I: Nervous, Integumentary, and Endocrine Systems.

BIO-234A Anatomy and Physiology II: Cardiovascular, Lymphatic, Respiratory, and Urinary Systems**02 Semester Credits**

Study of structure and function of human body. Considers structure, function, and terminology of cardiovascular, lymphatic, respiratory, and urinary systems. Laboratory experiences include demonstrations, microscopic observations, anatomic models, and videos related to topics.

Lecture 1.5 hours. Laboratory 1.5 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I; or BIO-233A Anatomy and Physiology I: Skeletal and Muscular Systems and BIO-233B Anatomy and Physiology I: Nervous,

Integumentary, and Endocrine Systems; or departmental approval: comparable knowledge/skills.

BIO-234B Anatomy and Physiology II: Digestive, Immune, Reproductive Systems**02 Semester Credits**

Study of structure and function of the human body. Focus on structure, functions, and terminology of digestive and reproductive systems. Immunology, cellular division, embryological and fetal development, classical genetics and genetic technology considered. Laboratory experiences include demonstrations, microscopic observations, anatomic models, and videos related to topics.

Lecture 1.5 hours. Laboratory 1.5 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I; or BIO-233A Anatomy and Physiology I: Skeletal and Muscular Systems and BIO-233B Anatomy and Physiology I: Nervous, Integumentary, and Endocrine Systems.

BIO-2500 Microbiology**04 Semester Credits**

Survey of microorganisms in terms of physiology, biochemistry, genetics, and diversity with emphasis placed on prokaryotes and eukaryotes causing human diseases. Methods of their control including physical, mechanical, chemical, chemotherapeutic, and role of the immune system discussed.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): BIO-1410 Anatomy and Physiology of Domestic Animals I; or BIO-2331 Anatomy and Physiology I; or BIO-1500 Principles of Biology I; or BIO-1050 Human Biology and BIO-105L Human Biology Laboratory and BIO-1100

Introduction to Biological Chemistry; or departmental approval: comparable knowledge or skills.

BIO-2600 Pathophysiology**03 Semester Credits**

General mechanisms of disease processes and health problems including inflammation, degeneration, immunity, congenital, hereditary, neoplasia as well as diseases caused by deficiencies or excesses. The most commonly occurring diseases of body systems are surveyed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2341 Anatomy and Physiology II.

OAN Approved: OHL019

BUSINESS ADMINISTRATION - BADM**BADM-1000 Business Language Skills****02 Semester Credits**

Fundamentals of business language with emphasis on grammatical correctness, acceptable usage, spelling, vocabulary, punctuation, capitalization, correct number usage, and proofreading. Limited writing involves choice of correct word usage, effective sentence structure, and paragraph construction.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

BADM-1020 Introduction to Business**03 Semester Credits**

Comprehensive survey of the American business system with emphasis on basic business vocabulary. Examination of principles and careers related to economics, management, marketing, accounting, finance, and general business.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1040 Principles & Practices of Customer Service**03 Semester Credits**

How to create customer satisfaction and loyalty: developing and using questions, building rapport, using conflict resolution techniques, making basic business calculations and using business decision-making model to convey information and solve customer problems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1050 Professional Success Strategy**03 Semester Credits**

Apply knowledge of the corporate environment, diversity, ethics, teamwork and professionalism to manage interpersonal challenges and maximize relationships.

Facilitate a meeting, set goals, use a time management system and effective verbal and written communications.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1060 Leadership Seminar**01 Semester Credits**

Application of leadership skills while building a community of learners. Share experiences, debate current events and examine case studies to enhance leadership skills. Use communication and facilitation skills while participating in online forums, field trips and learning from guest leaders who will provide leadership-in-action examples.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1070 Introduction to Project Management**03 Semester Credits**

Application of project management process, principles, and techniques that can be employed when implementing a project. Emphasis on project startup and definition, project planning and design, project management and project monitoring and evaluation methods.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1121 Principles of Management and Organizational Behavior**04 Semester Credits**

Introduction to management and organizational behavior principles, concepts, and skills employed in the operation of a business organization. Emphasis on planning, organizing, leading, controlling and decision making. Also includes organizational structures, organizational communication, and organizational performance.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1020 Introduction to Business; or BADM-1060 Leadership Seminar, or concurrent enrollment; or departmental approval; previous coursework and/or experience.

BADM-1210 Labor-Management Relations**03 Semester Credits**

Historical, legal, and structural environments which influence management-labor relations. Rights and responsibilities of unions and management; negotiation and administration of labor agreement; results of labor relations process and collective bargaining issues. Review and application of the labor relations process.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1300 Small Business Management**04 Semester Credits**

Introduction to entrepreneurial concepts of business management including planning, organizing, directing, and controlling. The course includes the principles needed to operate a business and is beneficiary for those who plan to have their own businesses and for those who desire to upgrade their skills in business management.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-2010 Business Communications**03 Semester Credits**

Study of oral, written and electronic business communication theory. Includes business correspondence writing, job preparation, research techniques, and formal and informal report preparation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

OAN Approved: OBU005

BADM-201H Honors Business Communications

03 Semester Credits

Critical analysis, application and study of oral, written and electronic business communication theory. Includes business correspondence writing, job preparation, research techniques, and formal and informal report preparation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-101H Honors College Composition I or concurrent enrollment; or ENG-1010 College Composition I with a grade of "B" or higher.

BADM-2020 Leadership Theory

03 Semester Credits

Analysis of leadership theories, approaches, decision-making methods. Impact of gender and generational differences, emotional intelligence, cultural sensitivity, and ethical behavior on leadership will be analyzed and discussed. Reflection on personal leadership style and characteristics and development of a professional development plan.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1121 Principles of Management and Organizational Behavior, and BADM-1060 Leadership Seminar.

BADM-2030 Management Development

03 Semester Credits

Experiential, skill-oriented and reflective course focused on managerial styles and competencies, including, but not limited to, communicating, conducting performance appraisal reviews, managing change and conflict, building and facilitating teams and applying management skills to day-to-day operations of an organization.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1121 Principles of Management and Organizational Behavior and BADM-1060 Leadership Seminar.

BADM-2040 Strategic Leadership

03 Semester Credits

Focuses on an examination of contemporary leadership theories, styles and strategies and how they affect organizations and society. Emphasis on ethics, communication, and decision-making. Examine cases of contemporary leadership issues and determine possible outcomes and alternatives. Create a personal development plan to determine personal leadership style.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1060 Leadership Seminar.

BADM-2110 Production/Operations Management

03 Semester Credits

Overview of manufacturing and service operations covering such topics as: flow, bottleneck, balance, quality, workplace contribution, planning, materials requirement planning, inventory management procurement, logistics, floor shop control, just-in-time (JIT), capacity changes,

technology and design, vertical integration, and operation strategy.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1020 Introduction to Business, or BADM-2160 Introduction to Purchasing.

BADM-2120 Logistics Management

03 Semester Credits

Logistics Management is the study of planning, executing, and controlling the flow and storage of goods, services, and information from the point of origin to the point of consumption for the purpose of meeting the customer's needs. Topics covered will include warehousing, transportation, inventory, materials handling, operations, and supply management.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2160 Introduction to Purchasing, or concurrent enrollment, or departmental approval: comparable knowledge and skill.

BADM-2150 Business Law

04 Semester Credits

Study of legal process as it relates to society, government, business and the individual; the law as it relates to legal system, ethics and social responsibility, contracts, sales, agency, business organizations, debtor-creditor relations, and governmental regulation of business.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1121 Principles of Management and Organizational Behavior or BADM-1020 Introduction to Business.

OAN Approved: OBU004

BADM-2160 Introduction to Purchasing

03 Semester Credits

Analysis of purchasing role in an industrial organization. Description of quality, specifications and standardization, supplier selection, international sourcing, pricing principles, types of contracts, negotiation techniques, make or buy, computer based system; EDI, capital equipment, services and value analysis, and legal and ethical aspects of purchasing.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1020 Introduction to Business or concurrent enrollment, or departmental approval: comparable knowledge or skills.

BADM-2180 Purchasing Management

03 Semester Credits

Capstone course in Purchasing Management program. Focuses on purchasing management process, including functions of planning, organizing, directing, motivating, and controlling the work and purchasing staff to help achieve organizational objectives. Purchasing systems and documentation discussed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2160 Introduction to Purchasing, or departmental approval: comparable knowledge or skills.

BADM-2240 Negotiations

03 Semester Credits

Principles, techniques, and skills needed in interpersonal, buyer-seller, transportation, and labor management negotiations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1020 Introduction to Business, or BADM-2160 Introduction to Purchasing.

BADM-2290 Urban Agribusiness Management

03 Semester Credits

In depth focus on agriculturally based production businesses in urban and regional environments. This course is recommended for business owners, managers, farmers and anyone involved with agriculturally based businesses, from start-ups to mature organizations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1300 Small Business Management or departmental approval.

BADM-2330 Human Resource Management

03 Semester Credits

Overview of human resource function consisting of recruitment, staffing, training, development, compensation and evaluation. Employment practices including legal and ethical issues.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

BADM-2340 Human Resource Law and Application

03 Semester Credits

Analyze basic employment law necessary to develop practical understanding of legal framework critical to human resource function and effectiveness. Employment law and application expanded in employment relationships and areas critical to human resource function such as staffing, Equal Employment Opportunity (EEO), Affirmative Action, Americans with Disabilities Act (ADA), Family and Medical Leave Act (FMLA), benefits, and safety. Explores impact of employment law, including current developments to human resource function and business.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2330 Human Resource Management, and eligibility for ENG-1010 College Composition I.

BADM-2390 Advanced Human Resource Practices

03 Semester Credits

Capstone course in Human Resource Management program. Explores application of human resource (HR) concepts and practices in organization context. Cases and scenarios advance learning through systems and operational application of HR competencies. HR planning, staffing, benefits, Equal Employment Opportunity (EEO), safety, performance management, compensation, and change management will be explored in light of advancing organizational effectiveness.

Contemporary human resource issues confronting business also analyzed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2330 Human Resource Management and eligibility for ENG-1010 College Composition I.

BADM-2400 Public Administration

03 Semester Credits

Students will gain an understanding of the complexities of Public Administration and will learn to apply managerial and technical skills to make government administration more efficient and less costly and increase tax payers' satisfaction. Course focus will be on County and Municipal Government.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

BADM-2450 New Business Development

05 Semester Credits

Capstone course in Small Business Management program. Complete business plan. Reflects generally accepted practice. Designed for student who wants to start a business.

Lecture 03 hours. Laboratory 04 hours.

Prerequisite(s): BADM-1300 Small Business Management, or departmental approval: comparable knowledge or skills.

BADM-2470 Marketing Techniques for Small Business

03 Semester Credits

Marketing research and other marketing activities; market segmentation, product development, advertising, sales promotion, personal selling, and pricing.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1300 Small Business Management, or MARK-2010 Principles of Marketing, or departmental approval: comparable knowledge or skills.

BADM-2501 Business Strategies

03 Semester Credits

Capstone course for Accounting, Business Management (basic program) and Marketing degrees. Critical analysis and application of business, marketing, accounting and financial concepts to determine alternatives and best course of action to maximize organizational performance.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: 20 credit hours of any combination of business administration, accounting or marketing courses.

BADM-2510 Import/Export Documentation and Transportation

01 Semester Credit

Processing documentation for import and export of goods and services, and study of transportation modes used in international shipments. Includes intermediaries, international shipment documentation and processing, uses of freight forwarders, U.S. Customs regulations, and foreign import requirements. Selection of optimum transportation methods for international shipments discussed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval.

BADM-2520 Operational Issues in International Business

02 Semester Credits

Analysis of overall concept of global operations and development of global operations strategy. Methods of differentiating among market entry options – indirect exporting, direct exporting, licensing, franchising, contract manufacturing and assembly, and full-scale integrated manufacturing studied. Study of various ownership strategies: wholly owned subsidiaries, joint ventures, or strategic alliances. Global human resource issues and intellectual property laws discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval.

BADM-2530 International Sourcing and Logistics

02 Semester Credits

Demystifies the purchasing and logistical elements involved with importing. Areas of examination include terminology, sourcing process, addressing cultural and ethical issues, required documents, negotiations, logistics enablers, customs, duties and legal considerations. Special attention paid to identification and utilization of resources. Comparison of International Purchasing versus a Global Sourcing strategy will be offered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval.

BADM-2600 Introduction to World Trade

03 Semester Credits

Overview of world trade with examination of foreign environments (economic, cultural, and legal) in which global companies operate. Study of documents and procedures required to import and export goods; international transportation modes; and payments and collection.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MARK-2010 Principles of Marketing or concurrent enrollment, or departmental approval: previous coursework and/or experience.

BADM-2610 Cross Cultural Communications

01 Semester Credit

Main components of communicative events across different cultures, main logistic approaches to analyzing them, and difficulties the differences can create in intercultural and cross-gender communication. Covers historical perspective, political and economic philosophy, social structure, religion, language and education, body language, titles, and respect, turn-taking and turn maintenance. Narrative structuring, intonation, requests, disagreements and criticism, information seeking, politeness, and business negotiation discussed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval.

BADM-2620 International Trade Finance and Insurance

02 Semester Credits

Comparison of international trade finance options. Techniques, terminology, philosophies, and approaches to international export-import financing. Methods of structuring letters of credit, sight drafts, time drafts and alternative financing options are detailed and applied to case studies. Includes how to obtain financing from domestic, foreign, private, government, and international organization sources.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval: previous coursework or experience.

BADM-2630 Legal Issues in International Business

01 Semester Credit

Examination of the legal underpinnings of global business environment. U.S., foreign, and international legal systems affecting U.S. companies conducting global business. Customs, taxation and global employment regulations are identified. Key U.S. regulations applied extraterritorially are analyzed as they impact the conduct of international business.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval: previous coursework and/or equivalent experience.

BADM-2710 Global Marketing**02 Semester Credits**

Overview of international marketing strategies and decisions, including choice of markets, mode of entry, appropriate organization for international expansion, and degree of adaptation/standardization/globalization of marketing mix elements. Researching international market opportunities, and examining available information sources. Strategic approach to international marketing management decision stressing economic, political, legal, and cultural characteristics of business abroad.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or department approval: previous coursework and/or experience.

BADM-2720 International Market Research**02 Semester Credits**

Tools needed to decide what markets to enter, methods to enter them, and successful strategies to exploit opportunities they offer. In contrast to market research that focuses on domestic business opportunities, international research covers different environments and cultures. Understanding of various market research techniques that are effective within a particular culture's frame of reference. Review of traditional research techniques, parameters for country screening and risk analysis, examination of impact of culture on research alternatives, and review of many sources accessible for accurate secondary data on international markets, industries, and legal/regulatory precedents.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

BADM-2730 Channels of Distribution in International Markets**01 Semester Credit**

Structure of the global distribution system. Development of global distribution system discussed along with factors influencing selection of channel members and methods of locating and selecting channel partners. Managing the global logistics system includes setting expectations, formulating entry strategy, recruiting distributors, motivating channel participants, and monitoring sales activities.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): BADM-2600 Introduction to World Trade, or departmental approval.

BADM-2790 International Business Strategy and Application**04 Semester Credits**

Capstone course in International Business. Application of knowledge and skills obtained in international marketing, trade documentation, transportation, finance and cultural awareness to real world international business scenarios. Includes in-class, comprehensive analytical/decision-making case studies. Student concomitantly involved in an

international internship experience that provides on-the-job exposure to international business activities.

Lecture 03 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 hours per week.

Prerequisite(s): BADM-2600 Introduction to World Trade, or concurrent enrollment, and departmental approval: 12 additional credit hours of technical courses.

BADM-2830 Cooperative Field Experience**01-03 Semester Credits**

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

CAPTIONING AND COURT REPORTING - C&CR**C&CR-1000 Introduction to Court Reporting****01 Semester Credit**

Comprehensive survey of field of court reporting. Examination of history of reporting, diversity, equipment needs and technological trends, role of the working reporter within the legal system, corporate environment, and educational system.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

C&CR-1100 Introduction to Voice Captioning**01 Semester Credit**

Introduction to voice captioning technology and the employment opportunities in this field.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

C&CR-1200 Voicewriting I**02 Semester Credits**

Instruction in the use of voice-recognition software and technology. Application of such technology enables users to create and edit documents, send email, access the Internet and perform other functions all in a hands-free manner.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1100 Introduction to Voice Captioning or concurrent enrollment; or departmental approval.

C&CR-1210 Voicewriting II

02 Semester Credits

Study of speech-to-text technology and the use of voice-recognition software while developing increased dictation speed, learn to dictate while listening to dictation, and create various documents including Excel spreadsheets, and particular legal and medical documents.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1200 Voicewriting I.

C&CR-1220 Voicewriting III

04 Semester Credits

Realtime translation of legal proceedings, broadcasts, and other voice-to-text environments using voice writing captioning-specific software in addition to speech-recognition software.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1210 Voicewriting II.

C&CR-1300 Realtime Theory I

04 Semester Credits

Focus on principles of writing on stenotype machine. On-line instruction of machine shorthand keyboard, arbitraries, phrases, word beginnings and endings. Emphasis on reading, writing, and reporter English skills in preparation for speedbuilding and transcription.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1000 Introduction to Court Reporting or concurrent enrollment; and eligibility for ENG-1010 College Composition I; or departmental approval.

C&CR-1330 Realtime Theory II

02 Semester Credits

This course is a continuation of Realtime Theory. Students will complete study of theory principles.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1300 Realtime Theory I.

C&CR-1340 Realtime Theory III

02 Semester Credits

Introduces students to the varied styles of writing in the court reporting profession including question and answer, literary, and jury charge format. Instruction in advanced principles of brief forms and phrases in speedbuilding development.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1330 Realtime Theory II or concurrent enrollment.

C&CR-1350 Legal Terminology

03 Semester Credits

Provides students with broad legal vocabulary, useful in any law related field. Emphasis on spelling, definition, and usage of legal terms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

C&CR-1400 Speedbuilding and Transcription at 100 WPM

02 Semester Credits

Speedbuilding at 80-100 wpm level. Utilization and expansion of machine-writing theory. Practical procedures on stenotype machine to develop beginning skill levels. Minimum exit speed is 100 wpm.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1340 Realtime Theory III.

C&CR-1410 Precision Writing I -- Using Brief Forms

01 Semester Credit

Designed to enhance writing skills on steno machine or with voicewriting technology. Emphasis on brief forms and specific phrases found in everyday vocabulary. Accuracy of outlines emphasized as well as use of specific brief forms. Course serves as a companion to speedbuilding curriculum.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): C&CR-1220 Voicewriting III or C&CR-1340 Realtime Theory III; and C&CR-1450 Speedbuilding and Transcription at 140 WPM, or C&CR-2400 Speedbuilding and Transcription at 180 WPM, or C&CR-2450 Speedbuilding and Transcription at 225 WPM.

C&CR-1420 Precision Writing II -- Arbitraries in Legal Vocabulary

01 Semester Credit

Enhancement of writing skills on steno machine or voicewriting software. Emphasis on brief forms or voice codes for specific phrases found within jury charge and other legal material. Accuracy of outlines or voice codes emphasized as well as use of specific brief forms. Course serves as companion to speedbuilding curriculum.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1340 Realtime Theory III; and C&CR-1450 Speedbuilding and Transcription at 140 WPM, or C&CR-2400 Speedbuilding and Transcription at 180 WPM, or C&CR-2450 Speedbuilding and Transcription at 225 WPM.

C&CR-1430 Precision Writing III -- Numeric and Alphabetic Accuracy

01 Semester Credit

Improve writing skills on steno machine or utilizing voicewriting software. Emphasis on numeric material and proper names. Accuracy of "letter spelling", phonetic steno or voicewriting of names with verification of name emphasized, as well as the ability to steno or voicewrite numbers fluently. Course serves as companion to speedbuilding courses.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1340 Realtime Theory III; and C&CR-1450 Speedbuilding and Transcription at 140 WPM, or C&CR-2400 Speedbuilding and Transcription at 180 WPM, or C&CR-2450 Speedbuilding and Transcription at 225 WPM.

C&CR-1450 Speedbuilding and Transcription at 140 WPM**02 Semester Credits**

Speedbuilding at 120-140 wpm level. Utilization and expansion of machine-writing or voicewriting theory. Practical procedures on stenotype machine or utilizing voicewriting technology to develop skill levels on question and answer testimony, jury charge and literary materials. Minimum exit speed is 140 wpm.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1340 Realtime Theory III; and concurrent enrollment in C&CR-1610 Speed Development I, or concurrent enrollment in C&CR-1620 Speed Development II, or concurrent enrollment in C&CR-1630 Speed Development III.

C&CR-1460 Literary Writing**02 Semester Credits**

Focuses on the skills of literary writing using court reporting technology. Emphasizes accuracy and writing development for the judicial, Communication Access Real-time Transcription (CART), and captioning environments.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): C&CR-1450 Speedbuilding and Transcription at 140 WPM, or concurrent enrollment.

C&CR-1521 Realtime Theory Reinforcement**02 Semester Credits**

Focus on principles of writing on stenotype machine. Review of machine shorthand theory principles introduced CCR 1300 and 1330. Emphasis on reducing hesitation while writing, reading steno outlines, and building speed on the steno machine.

Lecture 00 hours. Laboratory 04 hours.

Prerequisite(s): C&CR-1330 Realtime Theory II, or concurrent enrollment.

C&CR-1600 Court Reporting Technology**05 Semester Credits**

Basics of computer aided transcription. Emphasis on court reporting software, dictionary development, and transcript production. Development of scoping skills and research techniques.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1330 Realtime Theory II.

C&CR-1610 Speed Development I**01 Semester Credit**

Focuses on speedbuilding development using evaluation software for the purpose of analysis and practice. Endurance building and emphasis on literary writing skills.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1340 Realtime Theory III; or departmental approval.

C&CR-1620 Speed Development II**01 Semester Credit**

Focuses on speedbuilding development using evaluation software for the purposes of analysis and practice. Endurance building and emphasis on jury charge writing skills.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1220 Voicewriting III or C&CR-1340 Realtime Theory III or departmental approval.

C&CR-1630 Speed Development III**01 Semester Credit**

Focuses on speedbuilding development using evaluation software for the purpose of analysis and practice. Endurance building and emphasis on question and answer writing skills including multi-voice dictation.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1220 Voicewriting III or C&CR-1340 Realtime Theory III or departmental approval.

C&CR-2200 Medical Terminology for Captioning and Court Reporting**03 Semester Credits**

Study of basic medical terminology utilized in the captioning and court reporting profession. Emphasis on definition and usage of the medical terms, and research practices for transcript production.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1340 Realtime Theory III or concurrent enrollment; or C&CR-1220 Voicewriting III or concurrent enrollment.

C&CR-2300 Court Procedures**03 Semester Credits**

Emphasizes role of official and freelance reporter including communications skills, professional image and business etiquette. Preparation of deposition/court transcripts, marking and handling of exhibits, indexing and storing notes, reporting techniques and ethics, including NCRA Code of Ethics.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): C&CR-1200 Voicewriting I or C&CR-1300 Realtime Theory.

C&CR-2350 Editing Legal Documents**02 Semester Credits**

To develop understanding of parts of speech, sentence structure, proofreading, and management of other people's spoken words. Rules of punctuation and grammar go beyond the basics and are modified to accommodate ambiguous, clumsy, incongruous, and incorrect English frequently found in legal transcripts.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

C&CR-2360 Proofreading Skill Development 02 Semester Credits

Focuses on applying proofreading and editing skills to legal transcripts, jury charges, and literary materials. Accuracy of editing with regard to the placement of punctuation marks and spelling.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): C&CR-2350 Editing Legal Documents.

C&CR-2400 Speedbuilding and Transcription at 180 WPM 02 Semester Credits

Speedbuilding at 160-180 wpm level. Utilization and expansion of machine-writing or voicewriting theory. Practical procedures on stenotype machine or utilizing voicewriting technology to develop skill levels on question and answer testimony, jury charge and literary materials. Minimum exit speed is 180 wpm.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1450 Speedbuilding and Transcription at 140 WPM; and concurrent enrollment in C&CR-1610 Speed Development I, or concurrent enrollment in C&CR-1620 Speed Development II, or concurrent enrollment in C&CR-1630 Speed Development III.

C&CR-2450 Speedbuilding and Transcription at 225 WPM 02 Semester Credits

Speedbuilding at speed levels of 225 wpm Question and Answer test material, 200 wpm Jury Charge material and 180 wpm Literary. Utilization and expansion of machine-writing or voice-writing theory. Practical procedures on stenotype machine or voicewriting software and technology to develop skill levels on question and answer testimony, jury charge and literary materials.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-2400 Speedbuilding and Transcription at 180 WPM; and concurrent enrollment in C&CR-1610 Speed Development I, or concurrent enrollment in C&CR-1620 Speed Development II, or concurrent enrollment in C&CR-1630 Speed Development III.

C&CR-2460 Speed Enhancement 02 Semester Credits

Course devoted to speed development and problem solving. Provides support for individualized steno or voicewriting progress utilizing the department's software programs, digital dictation, and other pertinent resources as available.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-1220 Voicewriting III or C&CR-1340 Realtime Theory III; and concurrent enrollment in C&CR-1610 Speed Development I, or concurrent enrollment in C&CR-1620 Speed Development II, or concurrent enrollment in C&CR-1630 Speed Development III.

C&CR-2470 Advanced Technology 03 Semester Credits

Capstone course in Court Reporting and Captioning. Students apply technology and format applications to produce transcripts in preparation for initial employment. Concentrated, production-oriented class with employment related projects, deposition projects, and realtime projects.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): C&CR-1450 Speedbuilding and Transcription at 140 WPM, and C&CR-1600 Court Reporting Technology.

C&CR-2480 Using Captioning Technology 03 Semester Credits

Students apply steno or voice technology and format applications to produce captioning simulations in preparation for initial employment. A concentrated, production-oriented class with employment related projects from the captioning environment.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): C&CR-1450 Speedbuilding and Transcription at 140 WPM, and C&CR-1600 Court Reporting Technology or departmental approval.

C&CR-2490 Speedbuilding and Transcription at 250 WPM 02 Semester Credits

Speedbuilding at speed levels of 250 wpm Question and Answer test material, 225 Jury Charge test material, and 200 wpm Literary test material. Utilization and expansion of steno writing and voicewriting theory and technology. Practical procedures on stenotype machine or voicewriting software and technology to develop skill levels on question and answer testimony, jury charge and literary materials.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-2450 Speedbuilding and Transcription at 225 WPM, or department approval.

C&CR-2510 CART Production 03 Semester Credits

Focus on realtime writing and dictionary management for use in the Communications Access Realtime Translation (CART) environment.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): C&CR-1600 Court Reporting Technology and C&CR-1450 Speedbuilding and Transcription at 140 WPM or departmental approval.

C&CR-2520 Captioning Production 03 Semester Credits

Focus on the production of captions using steno or voicewriting technology. Build endurance and accuracy in realtime writing.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): C&CR-2480 Using Captioning Technology or departmental approval.

**C&CR-2550 Writing for Captioning and CART
02 Semester Credits**

Focuses on building realtime writing endurance in the captioning and Communication Access Real-time Transcription (CART) environments. Centers on accurate realtime translation and display of English text.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): C&CR-2510 CART Production and C&CR-2520 Captioning Production or departmental approval.

**C&CR-2601 Technical Terminology I
03 Semester Credits**

Designed to expose students to much of the subject matter court reporters encounter. Emphasis on medical and technical testimony with material duplicated from real-life situations.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): C&CR-1450 Speedbuilding and Transcription at 140 WPM, or concurrent enrollment.

**C&CR-2651 Technical Terminology II
03 Semester Credits**

Continued exposure to steno or voicewriting technical and medical vocabularies with emphasis on multi-voice dictation. Students will develop consistent steno or voicewriting patterns for terms and multi-voice designations in order to produce near-perfect, first-pass transcripts.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): C&CR-1450 Speedbuilding and Transcription at 140 WPM, or concurrent enrollment.

**C&CR-2660 Registered Professional Reporter
Examination Preparation
01 Semester Credit**

Provides preparation for national certification exam. Speedbuilding at 160-180 wpm level. Utilization and expansion of machine-writing theory. Practical procedures on stenotype machine to develop skill levels on questions and answer testimony, jury charge and literary materials. Minimum exit speed is 180 wpm. Stenotype machines and access to a computer with Internet is required.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): C&CR-1300 Realtime Theory, or departmental approval.

**C&CR-2840 Internship
01 Semester Credit**

Provides student with 75 hours of actual writing time during on-the-job training using voicewriting technology or machine shorthand technology.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 5 hours per week.

Prerequisite(s): Concurrent enrollment in C&CR-2450 Speedbuilding and Transcription at 225 WPM, and C&CR-2470 Advanced Technology.

**C&CR-2910 Internship for Captioning and CART
01 Semester Credit**

Provides student with 50 hours of actual writing time during on-the-job training using voicewriting technology or machine shorthand technology in the Captioning and Communication Access Real-time Transcription (CART) environment. Provides student with 30 hours of research and dictionary preparation during on-the-job training in Captioning and CART environments.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 80 hours of directed practice per semester (five hours a week of directed practice for 16 weeks).

Prerequisite(s): C&CR-2450 Speedbuilding and Transcription at 225 WPM or concurrent enrollment; and C&CR-2520 Captioning Production, and C&CR-2510 CART Production.

CHEMISTRY - CHEM**CHEM-1000 Everyday Chemistry
03 Semester Credits**

[This course is cross-listed as PSCI-1020. Credit can only be earned once for either course.] Survey of chemistry as related to environment, health and nutrition, and applications that affect quality of life. Basic concepts and applications of chemistry: consumer chemistry, acids and bases, medicines and drugs, pollution and conservation. Intended for non-science majors. To fulfill laboratory science requirement, student should enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990-Language Fundamentals II; or departmental approval.

**CHEM-100L Everyday Chemistry Laboratory
01 Semester Credits**

[This course is cross-listed as PSCI-102L. Credit can only be earned once for either course] Intended for non-science majors. Exercises on measurements, separation and synthesis methods, reaction rates, water analysis, household chemistry, forensic and environmental issues, and other related chemistry topics. Laboratory activities complement and enrich related lecture course.

Lecture 00 hour. Laboratory 03 hours.

Prerequisite(s): CHEM-1000 Everyday Chemistry or concurrent enrollment.

CHEM-1010 Introduction to Inorganic Chemistry**04 Semester Credits**

Introduction to atomic structure and bonding as basis for understanding valence, formulas, compounds and chemical reactions. Measurement, stoichiometry, states of matter, solutions, ionization, equilibria, acids, bases and pH, and health careers, scientific studies, and applications in daily life.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MATH-0960 Beginning Algebra II, or MATH-0980 Intensified Beginning Algebra; or eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning or departmental approval: equivalent knowledge or skills.

CHEM-101H Honors Introduction to Inorganic Chemistry**04 Semester Credits**

Introduction to the fundamental principles of chemistry including states of matter, atomic structure, bonding, chemical reactions, thermodynamics, ionization, equilibria, gas laws, solutions, acid-base chemistry, and nuclear chemistry. The principles of chemistry will be applied to medicine, nutrition, and the environment.

Laboratory work will illustrate chemical theories.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MATH-0960 Beginning Algebra II or MATH-0980 Intensified Beginning Algebra or eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning and ENG-101H Honors College Composition I; or departmental approval.

CHEM-1020 Introduction to Organic Chemistry and Biochemistry**04 Semester Credits**

Structure and properties of representative carbon compounds and applications to everyday life. Nature and metabolism of biochemical compounds and relationship of nucleic acids to protein synthesis.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry or CHEM-101H Honors Introduction to Inorganic Chemistry or sufficient score on Chemistry Assessment test.

CHEM-102H Honors Introduction to Organic Chemistry and Biochemistry**04 Semester Credits**

Study of the structure, properties, and function of carbon-based compounds. Introduction to biochemistry including structure, properties, and metabolism of proteins, carbohydrates, and lipids. Roles and structures of enzymes, vitamins, chemical messengers, deoxyribonucleic acid (DNA), and ribonucleic acid (RNA) in cellular function. Principles of structure and function will apply to medicine and nutrition.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): CHEM-101H Honors Introduction to Inorganic Chemistry, or departmental approval.

CHEM-1300 General Chemistry I**04 Semester Credits**

Study of fundamental principles of chemistry emphasizing atomic theory and structure, chemical bonding, thermochemistry, solutions, stoichiometry, and state of matter. To fulfill laboratory science requirement, students should enroll in related laboratory course.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry, or sufficient score on Chemistry assessment test; and MATH-1270 Intermediate Algebra, or MATH-1280 Advanced Intermediate Algebra or higher, or sufficient score on Math assessment test; or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC008 (1 of 2, both must be taken)

CHEM-130H Honors General Chemistry I**05 Semester Credits**

Study of fundamental principles of chemistry emphasizing atomic theory, periodic trends, structure and bonding, chemical reaction and stoichiometry, energy, and the states of matter. Perform laboratory experiments designed to demonstrate chemical concepts and support theoretical phenomena. Honors General Chemistry I combines lecture and laboratory into one course.

Lecture 04 hours. Laboratory 03 hours.

Prerequisite(s): CHEM-1010 Introduction to Inorganic Chemistry or CHEM-101H Honors Introduction to Inorganic Chemistry, or sufficient score on Chemistry assessment test; and MATH-1510 Trigonometry and MATH-1521 College Algebra, or MATH-151H Honors Trigonometry and MATH-152H Honors College Algebra, or MATH-1580 Precalculus, or sufficient score on Math assessment test; or department approval: equivalent knowledge or skills.

OAN Approved: OSC008

CHEM-130L General Chemistry Laboratory I**01 Semester Credits**

Basic laboratory experiments which correlate with chemical concepts, principles and processes of General Chemistry II. Emphasis on techniques and procedures.

Lecture 00 hour. Laboratory 03 hours.

Prerequisite(s): CHEM-1300 General Chemistry I or concurrent enrollment; or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC008 (2 of 2 courses, both must be taken)

CHEM-1310 General Chemistry II**04 Semester Credits**

Emphasis on kinetics, equilibrium concepts, electrochemistry, nuclear chemistry, thermodynamics, coordination chemistry and organic chemistry. To fulfill laboratory science requirement, students should enroll in related laboratory course.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CHEM-1300 General Chemistry I, or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC009 (1 of 2 courses, both must be taken)

CHEM-131L General Chemistry Laboratory II**01 Semester Credits**

Basic laboratory experiments which correlate with chemical concepts, principles and processes of General Chemistry. Emphasis on technique and procedures.

Lecture 00 hour. Laboratory 03 hours.

Prerequisite(s): CHEM-130L General Chemistry Laboratory I, and CHEM-1310 General Chemistry II or concurrent enrollment; or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC009 (2 of 2 courses, both must be taken)

CHEM-131H Honors General Chemistry II**05 Semester Credits**

Study of the fundamental principles of chemistry emphasizing chemical and nuclear kinetics, thermodynamics, and equilibrium. Introduction and study into the specific branches of chemistry: electrochemistry, coordination, organic, nuclear, and environmental chemistry. Perform laboratory experiments designed to demonstrate chemical principles and support theoretical phenomena. Honors General Chemistry II combines lecture and laboratory into one course.

Lecture 04 hours. Laboratory 03 hours.

Prerequisite(s): CHEM-130H Honors General Chemistry I, or department approval: equivalent knowledge or skills.

OAN Approved: OSC009

CHEM-2000 Analytical Chemistry**05 Semester Credits**

An introduction to the theoretical principles of quantitative and instrumental analysis. Emphasis on experimental methods, sampling techniques, statistics, error theory, chemical equilibrium, stoichiometry, and volumetric and gravimetric procedures as applied to quantitative determinations. Provides an introduction to spectroscopic, electroanalytical, and chromatographic methods of analyses. Provides hands-on experience to

students by completion of laboratory experiments related to these principles. Emphasis on development of laboratory technique.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): CHEM-1310 General Chemistry II and CHEM-131L General Chemistry Laboratory II.

CHEM-2300 Organic Chemistry I**05 Semester Credits**

Functional group chemistry of aliphatic compounds covering nomenclature, structural-reactivity, and synthetic reactions. Theoretical concepts, structural bonding, stereochemistry and reaction mechanisms emphasized. Use of various spectrometric techniques for identification of compounds introduced.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): CHEM-1310 General Chemistry II, and CHEM-131L General Chemistry Laboratory II or CHEM-131H Honors General Chemistry II; or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC010 (1 of 2 courses, both must be taken)

CHEM-2310 Organic Chemistry II**05 Semester Credits**

Continuation of Organic Chemistry I. Common functional groups with emphasis on aromatic and carbonyl containing molecules, and selected topics such as heterocyclic compounds, macromolecules, and biomolecules introduced.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): CHEM-2300 Organic Chemistry.

OAN Approved: OSC010 (2 of 2 courses, both must be taken)

CHINESE - CHIN
CHIN-1011 Beginning Chinese Language and Culture I**04 Semester Credits**

Introduction to standard spoken Chinese (Mandarin) through listening, speaking and using Chinese software on computer. Emphasis on becoming familiar with four tones of Chinese language.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

CHIN-1021 Beginning Chinese Language and Culture II**04 Semester Credits**

Continued study of standard Chinese with expansion of vocabulary. Practice in conversation on given subjects and transition from speaking to reading.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): CHIN-1011 Beginning Chinese Language and Culture I, or departmental approval.

CONSTRUCTION ENGINEERING TECHNOLOGY - CNST

CNST-1281 Construction Engineering Orientation

03 Semester Credits

Introduction to construction objectives and opportunities. Recognition of professional practices, current issues and developments in construction, including Green Building. Overview of construction project operations, trade journals, and associations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

CNST-1410 Architectural CAD I

03 Semester Credits

Working drawing techniques of domestic structures using computer-aided drafting software. Floor plans, foundation plans, wall-sections, elevations, site plans and dimensioning techniques will be the core concepts.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): CNST-1730 Construction Print Reading, or departmental approval.

CNST-1420 Architectural CAD II

03 Semester Credits

Working drawing techniques for commercial buildings, including steel and concrete structural systems, electrical plans and building section details. Advanced concepts of CAD will be used.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): CNST-1410 Architectural CAD I.

CNST-1510 Green Building & Sustainability I

03 Semester Credits

Introduction to Green Building and sustainability issues. Study of current practices, systems, and materials used in the construction of Green buildings. Recognition of planning and design features that enhance the energy efficiency of a building and its environment. Overview of Green Building Rating Systems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

CNST-1730 Construction Print Reading

02 Semester Credits

Overview of construction drawings for the major construction disciplines to understand presentation methods, interpretation, sequence of preparation, bid submittal processes, revision control, and code requirements. Commercial building, structural, and civil drawings utilized.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

CNST-2110 Basic Survey Practices

03 Semester Credits

Study of construction site engineering using survey instruments for elevation contours, drainage, and grading for construction. Laser-levels, transits, and total stations will be utilized. Emphasis on instrument applications and field data recording.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1510 Trigonometry; and CNST-1730 Construction Print Reading; or departmental approval.

OAN Approved: OET015

CNST-2130 Construction Methods, Materials and Equipment

03 Semester Credits

Study of common construction approaches including pre-fabrication practices, modularization, and traditional site erection means. Construction materials and properties; testing methods; equipment usage, attributes, cost, and availability discussed. Includes 10-hour OSHA training program.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): CNST-1730 Construction Print Reading, or departmental approval.

OAN Approved: OET008

CNST-2150 Building Enclosures

03 Semester Credits

Analysis of wall, roof, and floor assemblies for residential and light commercial construction with a concentration in thermal, air, and moisture control. Includes laboratory activities for constructing a building enclosure with non-traditional techniques and materials, including structural insulated panels, engineered lumber, fiber cement siding, composite decking, and insulated concrete forms.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment, or departmental approval.

CNST-2200 Architectural Building Information Modeling

03 semester Credits

Introduction into building information modeling (BIM) for architectural building envelope design. Autodesk Revit software will be used to generate a commercial building, and produce related drawings used in a set of contract documents.

Lecture 01 hours. Laboratory 04 hours.

Prerequisite(s): CNST-1730 Construction Print Reading.

CNST-2210 Mechanical & Electrical Systems**03 Semester Credits**

Study of mechanical and electrical systems for building construction, water supply, waste and sanitation. Heat loss, heat gain and hydronic heating systems; forced air and solar heating systems used in buildings; electrical systems of power distribution and lighting for commercial buildings among the topics covered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment or concurrent enrollment; or departmental approval.

CNST-2250 Advanced Construction Print Reading**03 Semester Credits**

Advanced print reading for commercial construction drawings. Interpreting drawing details in accordance to project manual, and material quantity take-off. Constructability review processes will be used to determine effective design and sustainability.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): CNST-1730 Construction Print Reading, or departmental approval.

CNST-2330 Construction Scheduling**03 Semester Credits**

Time management of construction activities by implementing Gantt charts, activity on arrow diagrams, PERT techniques, and critical path method. Computer scheduling software will be used throughout the course.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment, or departmental approval.

CNST-2360 Energy Auditing & Weatherization**03 Semester Credits**

Overview of standards for energy auditing and energy efficiency analysis using the house-as-a-system approach. This course will provide individuals with the knowledge necessary to verify energy consumption and options to save money by conserving energy, with respect to the building envelope. Students will participate in classroom learning and laboratory activity.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment, or concurrent enrollment.

CNST-2410 Principles of Structural Design**03 Semester Credits**

Study of building design structural systems. Topics include steel beams, columns, base plates, fasteners and weldments. Emphasis on tension and compression for engineered building products and concrete structures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MET-1601 Technical Statics, or departmental approval.

CNST-2420 Sustainable Design & Supervision**03 Semester Credits**

Instruction for construction supervisors on sustainable construction techniques as they relate to the construction phase of a LEED project. Content includes coverage of project sustainability goals, green building materials and technologies, and how to apply the principles of a green building rating system.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment or concurrent enrollment; or departmental approval.

CNST-2631 Construction Management Systems**03 Semester Credits**

Study of construction management practices including general contracting, subcontracting, project delivery, cost control, change processes and procurement. Introduction into lien implications, safety, quality and jobsite labor relations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CNST-2130 Construction Methods, Materials and Equipment.

CNST-2990 Construction Estimating & Cost Analysis**03 Semester Credits**

Capstone course in Construction Engineering Technology program. Includes construction cost estimates, cost forecasting, and cost reports for a construction project using computer software.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Concurrent enrollment in CNST-2130 Construction Methods, Materials and Equipment.

**CRIMINAL JUSTICE - CJ
(formerly Law Enforcement)****CJ-1000 Introduction to Criminal Justice****03 Semester Credits**

History and philosophy of criminal justice in America; review system, identification of the subsystems, role expectations, and relationships. Theory of crime, punishment, and rehabilitation. Ethics, education, and training required in law enforcement, nature of formal and informal decision making in criminal justice, sociology, politics, economics, and law of criminal justice.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment.

OAN Approved: OSS031

CJ-1010 Computers in Criminal Justice

02 Semester Credits

Introduction to uses and applications of computer technology in criminal justice field. Includes discussions of basic terminology; common applications in database, word processing, and spreadsheet uses; and an introduction to the World Wide Web. Comprehensive examination of computer crimes and procedures, techniques, and legal constraints which apply.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

CJ-1020 Introduction to Homeland Security

02 Semester Credits

As part of the Basic Police Academy certified by the Ohio Peace Officer Training Commission, this course will provide a basic overview into the topic of Homeland Security. Topics will include Hazmat and WMD Awareness for the First Responder and Bombs, Explosives and Incendiary Devices.

Lecture 02 hours. Laboratory 00 hours.

Departmental Approval: Admitted to OPOTA Basic Police Academy.

CJ-1050 Introduction to Security

02 Semester Credits

Historical perspective on development of security with definition of current role and function. Studies in fundamental principles of risk assessment, physical plant security, defense systems, internal security, fire prevention and disaster preparedness in security field.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

CJ-1070 Introduction to Corrections

03 Semester Credits

Introduction to processes, procedures and issues in contemporary corrections. History and evolution of various elements of juvenile and adult correction systems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OSS033

CJ-1111 Constitutional Law for Police

03 Semester Credits

Development of the Federal Constitution and history of Bill of Rights. In-depth analysis of First, Fourth, Fifth, Sixth, Eighth and Fourteenth Amendments. Impact of recent court decisions on these amendments and their implications for criminal justice officials.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

CJ-1120 Criminal Court Procedure

02 Semester Credits

Exploration of U.S. adversary system of criminal justice. Examines components including legislature, police, prosecution, courts and corrections. Comprehensive

review of procedures, beginning with arrest through post-trial motions and sentencing.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

CJ-1130 Criminal Evidence

02 Semester Credits

Overview of trial procedures: classification of evidence, proof, presumptions, relevance, eyewitness identification, testimonial privileges, character, hearsay, impeachment, scientific evidence, collection and preservation of evidence.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

CJ-1200 Economic Crime Investigation

03 Semester Credits

Examines conduct of individuals, corporations, institutions and government agencies as it relates to economic crime. Ethical dilemmas will be analyzed using critical thinking to build and manage criminal cases for successful prosecution.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-1300 Patrol Operations

04 Semester Credits

Examination of techniques required in performing patrol operations. Covers preparation, vehicle patrol, foot patrol, crimes in progress, prowler calls, building searches, performance of stops and approaches, vehicle identification, and prisoner booking and handling. Incorporates report writing required of police officers. Discussion of various types of forms and reports necessary and methods for accurate completion. Use and structure of field notes, investigative report form and content, and use of proper grammar in narrative reports.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice or departmental approval: comparable knowledge or skills.

CJ-1310 Traffic Enforcement and Investigation

03 Semester Credits

Examination of traffic accident investigation, motor vehicle law enforcement, crimes, and other control procedures utilized in highway transportation system. Comprehensive study of enforcement principles, problems, and procedures and how accident investigation relates to overall community safety.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice or departmental approval: comparable knowledge or skills.

CJ-1320 Ethics in Criminal Justice**02 Semester Credits**

Police conduct is examined relative to ethical and legal principles. Application of federal and state civil, criminal and administrative law. Sources of potential ethical lapses for law enforcement are analyzed and strategies are formulated to address them both proactively and administratively.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment.

CJ-1330 Criminal Law**03 Semester Credits**

Nature of the criminal act, essential elements for prosecution and defense, legal theories of responsibility, overview of common law offenses, and identification of emerging trends in law.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

CJ-1400 Assets Protection**04 Semester Credits**

In-depth study of principles of loss prevention with emphasis on risk management. Examination of concepts of physical security with management systems; physical security requirements; alarm systems; planning and vulnerability assessments and interaction with law enforcement.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

CJ-1500 Community Intervention Resources**04 Semester Credits**

Analysis of community-based resources designed for intervention, prevention and control or rehabilitation of juvenile or adult offender.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2200 Interviews & Interrogations**03 Semester Credits**

Development of the skills necessary to elicit information from potential witnesses and/or offenders. Topics include deception detection, the art of interviewing, and the use of proven interrogation techniques.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2210 Organized Crime**03 Semester Credits**

History and legal analysis of criminal enterprises in America, including their pragmatic operation and the criminal justice response using investigative techniques, and court sentencing to disrupt illegal operations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2230 Undercover Operations**03 Semester Credits**

History and techniques of undercover operations, both long and short term infiltration. Includes theoretical aspects of undercover work as well as the practical aspects via role-playing and actual field exercises.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice.

CJ-2300 Juvenile Delinquency**02 Semester Credits**

Juvenile delinquency as it negatively affects a family, community and how the police and court structure and reintegrate youthful offenders into society.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental approval: comparable skills.

CJ-2350 Special Issues in Criminal Justice**02 Semester Credits**

Review of special and contemporary issues in the field of criminal justice. Discussion of varying viewpoints and aspects of problems faced in these fields. Critical and analytical approach used to understand role and relationship of the criminal justice system in today's society.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental approval.

CJ-2360 Community Oriented Policing**03 Semester Credits**

Analysis and effectiveness of neighborhood style policing efforts to reduce crime and disorder.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental approval.

CJ-2370 Fire Arms Techniques**03 Semester Credits**

Units of study include safety techniques, handgun and related equipment, basic fundamentals of pistol craft, one-hand techniques, multiple targets, low light level conditions, use of protective cover, and shotgun training.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: successful completion of Basic Police Academy at Cuyahoga Community College.

CJ-2380 Defensive Driving**02 Semester Credits**

Emergency vehicle operation under strenuous conditions for law enforcement.

Lecture 01 hours. Laboratory 03 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice, and departmental approval.

CJ-2390 The Investigative Process

04 Semester Credits

Overview of investigative methods including databases and background checks. In-depth look at the criminal investigation process with focus on crime scene, reports and evidence identification. Specific investigative methods for particular crime types are analyzed.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice, or departmental approval.

CJ-2400 Security Management

04 Semester Credits

Comprehensive examination of the organization, staffing, supervision and administration of the security function. Focuses on general security management, supervision and operational management along with public relations.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1050 Introduction to Security, or departmental approval: prior knowledge or experience.

CJ-2410 Security Investigation

03 Semester Credits

Intensive examination of investigative function as it relates to private security. Criminal and non-criminal investigations. Study of databanks, surveillance methods, interviews, backgrounds, and report preparation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1050 Introduction to Security, or departmental approval: prior knowledge or experience.

CJ-2420 Legal Aspects of Private Security

03 Semester Credits

Study of various Federal and State laws and impact on security management process. In-depth examination of state criminal code as applied to private security.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1050 Introduction to Security, or departmental approval: prior knowledge or experience.

CJ-2440 Protection Services

02 Semester Credits

Examine the role of those tasked with protecting assets, including critical infrastructure identified by the Department of Homeland Security and other public and private property.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice or departmental approval: prior equivalent experience.

CJ-2510 Community Supervision and Aftercare

04 Semester Credits

Examine various aspects of contemporary community-based corrections practices and aftercare programs to reintegrate criminal offenders into society in a constructive way.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1070 Introduction to Corrections or departmental approval: comparable knowledge and skills.

CJ-2530 Correctional Case Management

03 Semester Credits

Application of counseling techniques applicable to the correctional offender involving field and clinical situations simulation for students to gain experience in interviewing, chronological recording, report writing, and oral presentation of cases.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): CJ-1070 Introduction to Corrections departmental approval: comparable knowledge or skills.

CJ-2830 Cooperative Field Experience

01 - 03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

CJ-2840 Corrections: Principles and Practices

03 Semester Credits

Students placed in appropriate criminal justice agency facility under guidance of experienced practitioner with a focus on application of corrections principles.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Practicum: 8 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): CJ-2510 Community Supervision and Aftercare.

CJ-2990 Issues in Supervision

04 Semester Credits

Capstone course in Law Enforcement. Comprehensive review of law enforcement processes, accomplished by looking at role of supervisor and his/her responsibility to the department and community. Further application of law enforcement principles by use of current readings in criminal justice.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: completed 20 credits in Criminal Justice.

DANCE - DANC**DANC-1100 Dance Appreciation**
03 Semester Credits

Introduction to elements and styles of the art of dance. Increase student's ability to identify and understand stage, movie and video dance styles through visual and movement concepts. Various performing artists and choreography studied in cultural and historical context.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): None.

DANC-1220 Theatre Dance/Stage Movement
03 Semester Credits

Basic stage geography, and theatre dance: jazz, latin, waltz, polka, and musical staging for singers and actors. Non-theatre majors learn techniques to analyze and control non-verbal communication (body language). Control and organization of space, energy and time, including basic stage combat, applied to group activities.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): None.

DANC-1400 African Dance I
03 Semester Credits

Introduction to the fundamentals and basic movement of West Africa. Culture, history and philosophy of West African dance are explored through song, music, costumes and language. Minimum of two hours per week preparing dance presentations, viewing selected video performances and attending live dance performances are required. (Course may only transfer as elective credits.)
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): None.

DANC-1410 African Dance II
03 Semester Credits

Secondary theories and practices of African Dance techniques. Advanced exploration of culture, history and philosophy of West African dance through song, music, costumes and language. Minimum of two hours per week preparing dance presentation, viewing selected video performances and attending live dance performances are required. (Course may only transfer as elective credits.)
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): DANC-1400 African Dance I.

DANC-1500 Dance I
03 Semester Credits

For student with limited or no dance experience. Movement vocabulary of modern dance, ballet and jazz will train student to recognize and perform basic dance combinations, to understand importance of proper alignment and muscular awareness, and to analyze basic elements of movement: time, space and energy.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): None.

DANC-1510 Dance II
03 Semester Credits

Further study of secondary techniques of modern dance. Stresses dance as artistic form of self expression. Students identify variety of rhythms and perform secondary and intermediate dance combinations.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): DANC-1500 Dance I, or departmental approval: comparable knowledge or skills.
OAN Approved: OAH013

DANC-1600 Choreography and Production
02 Semester Credits

Student learns to make solo and group dances by exploring choreography process: content, form, technique and projection. Through formal and informal dance performances, student learns elements of lighting, costuming, public relations and promotion.
Lecture 01 hour. Laboratory 02 hours.
Prerequisite(s): DANC-1500 Dance I, or departmental approval: comparable knowledge or skills.

DANC-2300 Dance III: Technique
02 Semester Credits

Intermediate dance techniques, concepts and theories. Studio work challenges and nurtures student's creative and interpretive ability and performance techniques.
Lecture 00 hours. Laboratory 04 hours.
Prerequisite(s): DANC-1510 Dance II, or departmental approval: comparable knowledge or skills.

DANC-2310 Dance IV: Technique
02 Semester Credits

Advanced dance techniques emphasizing dynamic variety and challenging physical limitations and movement memory. Exploration of different modern techniques and dance accompaniment applied to studio work.
Lecture 00 hours. Laboratory 04 hours.
Prerequisite(s): DANC-2300 Dance III: Technique, or departmental approval: comparable knowledge or skills.

DEAF INTERPRETIVE SERVICES - DIS**DIS-1300 Interpreting Fundamentals**
03 Semester Credits

History of interpreting and survey of the profession. Introduction to Registry of Interpreters of the Deaf's (RID) Code of Ethics, and certification process. Orientation to Deaf community, language and culture. Introduction to basic interpreting settings. Research into variety of topics about the profession. Present the cognitive model of interpreting.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): None.

DIS-1310 Interpreting I

02 Semester Credits

First in two-course sequence. Theoretical and practical approach to sign language interpreting, including platform and interview-style interpreting. Practical application in rendering spoken messages into American Sign Language. Role-playing in various basic interpreting situations. Exposure to other communication systems.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): ASL-1020 Beginning American Sign Language II, and DIS-1300 Interpreting Fundamentals.

DIS-1402 American Sign Language Linguistics

03 Semester Credits

Study of linguistic principles of American Sign Language (ASL) by comparing lexicon and syntax of ASL to other sign systems and English. Analysis of current research in the areas of phonology, morphology, semantics, syntax and sociolinguistic structure of ASL. Comparison of two major systems for describing signs and how they are used in the language, the Stokoe System and the Liddell/Johnson Model. Study sociolinguistic aspects of ASL as it is used among Deaf individuals. Analysis of linguistic structures within ASL.

Lecture 03 hours. Laboratory 00 hours.

Departmental Approval:

Prerequisite(s): ASL-1010 Beginning American Sign Language I and Departmental Approval: Admission to program.

DIS-1850 Practicum I

02 Semester Credits

First in two-course sequence. Experience a variety of situations and concepts by observing interpreters in actual work settings; educational and community-based.

Supervision by college-approved interpreter.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): ASL-2010 Intermediate American Sign Language I, and DIS-1310 Interpreting I, and DIS-2320 Educational Interpreting, and concurrent enrollment in DIS-1970 Practicum Seminar I.

DIS-1970 Practicum Seminar I

01 Semester Credit

Companion seminar to DIS 1850. Provides opportunities for sharing educational and community-based practicum experiences through log entries, videotapes, and group discussions. Includes preparation for national certification examination. Current issues in the interpreting field are discussed.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): ASL-2010 Intermediate American Sign Language I, and DIS-1310 Interpreting I, and DIS-2320 Educational Interpreting, and concurrent enrollment in DIS-1850 Practicum I.

DIS-2300 Transliterating

02 Semester Credits

Theoretical and practical approach to process of sign language transliterating. Students render spoken English messages into signed English, as well as signed English syntax into spoken English through role-play. Role-playing and vocabulary-building in English structures, including idiomatic phrasing.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ASL-2010 Intermediate American Sign Language I, and DIS-1310 Interpreting I.

DIS-2310 Interpreting II

02 Semester Credits

Development of techniques learned in Interpreting I. Various types and situations in interpreting and public speaking also discussed and performed. Application of the RID Code of Ethics and the Educational Interpreter's Code of Conduct.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): DIS-1310 Interpreting I, and ASL-2010 Intermediate American Sign Language I, and DIS-2320 Educational Interpreting.

DIS-2320 Educational Interpreting

03 Semester Credits

Analysis and monitoring of students' understanding of interpreting/transliterating in educational setting. Application of Educational Code of Ethics, Ohio Guidelines for Educational Interpreters, manual code systems, and technical vocabulary. Study of history of Deaf Education, educational laws and support services, child development, and best practices in educational setting.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): DIS-1300 Interpreting Fundamentals, and EDUC-1011 Introduction to Education.

DIS-2410 Voicing

02 Semester Credits

Development of voicing skills needed in voice-to-sign interpreting for people who are deaf, with emphasis on public speaking, signing and performance techniques. Emphasis on vocabulary selection, vocal inflection, and register in multiple settings, as well as various sign systems.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): ASL-2020 Intermediate American Sign Language II, and DIS-2300 Transliterating, and DIS-2310 Interpreting II.

DIS-2850 Practicum II**02 Semester Credits**

Second in two-course sequence. Practical interpreting experience in variety of actual work settings while being supervised by an approved interpreter.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): ASL-2020 Intermediate American Sign Language II, and DIS-1850 Practicum I, and DIS-1970 Practicum Seminar I, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and concurrent enrollment in DIS-2970 Practicum Seminar II.

DIS-2970 Practicum Seminar II**01 Semester Credit**

Capstone course in Deaf Interpretive Services, and companion seminar to Practicum II. Supplements practicum experience by providing opportunities for sharing experiences through log entries, videotapes, and group discussions. Continued preparation for national certification examination. Resume writing and professional development opportunities. Stress management and health issues.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 1 hour a week.

Prerequisite(s): ASL-2020 Intermediate American Sign Language II, and DIS-1850 Practicum I, and DIS-1970 Practicum Seminar I, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and concurrent enrollment in DIS-2850 Practicum II.

DENTAL ASSISTING - DAST
DAST-1200 Oral Structure and Development**03 Semester Credits**

Introduction to dental terminology, form and function of teeth and related structures. Development, histology, morphology and pathology of permanent and deciduous dentitions and soft tissue structures. Helps students identify normal structures and common abnormalities within the oral cavity, and to communicate effectively with other members of dental team.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Dental Assisting program.

DAST-1300 Dental Assisting Methods I**05 Semester Credits**

Integrated study of dental equipment, instruments, materials, assistant and operator role, and clinical procedures associated with the delivery of basic dental treatment. Physical and biological properties of restorative materials, bases, gypsum products, and impression materials are discussed with focus on the examination, diagnostic, amalgam, and composite procedures. Introduction to the principles of microbial activity and

application of current practices of infection control in dental office.

Lecture 04 hours. Laboratory 03 hours.

Prerequisite(s): DAST-1200 Oral Structure and Development or concurrent enrollment; and ENG-1010 College Composition I.

DAST-1310 Dental Assisting Radiography I**03 Semester Credits**

Study of physical properties of x-radiation, generation of x-rays for dental applications, uses of x-rays in dentistry, and understanding of and adherence to strict safe operating procedures and infection control practices.

Theory and practice in fundamentals of oral radiographic technique as relevant to dental assistant. Emphasis on producing diagnostically acceptable full mouth and bite-wing radiographs on adult patient.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): DAST-1200 Oral Structure and Development or concurrent enrollment; and ENG-1010 College Composition I.

DAST-1320 Dental Office Management**03 Semester Credits**

Development of sound dental office business procedures and identification of the role of the dental auxiliary in management of dental practice. Emphasis on appointment scheduling guidelines, bookkeeping, telephone etiquette, collections, banking and insurance procedures. Review of basic math, grammar and spelling. Typing and computer keyboard skills are introduced and/or reinforced.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): DAST-1200 Oral Structure and Development or concurrent enrollment, or departmental approval.

DAST-1330 Reimbursement for Dental Services**02 Semester Credits**

Basic overview of dental terminology as it relates to conditions and services provided in dental care. Introduction to insurance coverage, claims forms, standardized coding, claims processing and payment collection to maximize profits in a dental business. Introduction to the most current dental office software. Review of job descriptions and areas of responsibility within a dental business and introduce methods to maximize business opportunities.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DAST-1320 Dental Office Management, or concurrent enrollment; or departmental approval.

DAST-1400 Dental Assisting Methods II
03 Semester Credits

Integrated study of dental equipment, instruments, materials, assistant and operator roles, and clinical procedures associated with delivery of specialty dental treatment. Physical and biological properties of materials discussed as foundation for application of these materials during endodontic, removable and fixed prosthodontics, orthodontic, surgical, and periodontic clinical procedures. Skills developed in preparation and manipulation of materials, instruments and equipment, in principles and practices of four-handed dentistry, in anticipating needs of operator, and in monitoring patient reaction. Observation in specialty practice required.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): DAST-1300 Dental Assisting Methods I, and DAST-1860 Dental Assisting Practicum or concurrent enrollment.

DAST-1410 Dental Assisting Radiography II
02 Semester Credits

Theory and practice in the fundamentals of oral radiographic technique for special applications including occlusal, panoramic, edentulous and pediatric radiographs. Emphasis on mastery of the paralleling exposure technique, using the extension cone paralleling device, in producing diagnostically acceptable full mouth and bite-wing radiographs on the adult patient. Patients will be regularly appointed to the dental assisting radiography course clinic where students will develop clinical competence under instructor supervision. Skills in maintenance of processing equipment, duplication of radiographs, monitoring quality assurance of the equipment, charting existing restoration from radiographs, and recognition of pathologic condition commonly seen on radiographs.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): DAST-1310 Dental Assisting Radiography I.

DAST-1420 Current Concepts for the Dental Assistant
01 Semester Credit

Basic overview of clinical concepts and knowledge needed by the Certified Dental Assistant. Emphasis on chairside assisting, infection control and radiology.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: industry-related experience.

DAST-1850 Dental Assisting Practice
02 Semester Credits

Practical application of dental assisting skills and principles via field experience in a dental practice. Emphasis on chairside assisting, infection control, radiology, personal and professional growth. Seminar allows students to share learning experience.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): DAST-1300 Dental Assisting Methods I or concurrent enrollment, or departmental approval.

DAST-1860 Dental Assisting Practicum
04 Semester Credits

Practical application of dental assisting skill and principles via a field experience in a dental practice setting under supervision of a program-recognized practitioner or supervisor. Students rotate through various dental facilities. Emphasis is placed on techniques, efficiency, patient contact and personal and professional growth. Participation in a campus-based weekly seminar allows students to share learning experiences. Guest speakers.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 21 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): DAST-1400 Dental Assisting Methods II or concurrent enrollment.

DENTAL HYGIENE - DENT**DENT-1300 Preventive Oral Health Services I**
04 Semester Credits

Introduction to dental hygiene practice including professionalism, infection control, medical history, vital signs, oral inspection, preventive oral health, oral accretions, technique for the oral prophylaxis and medical emergencies.

Lecture 02 hours. Laboratory 06 hours.

Prerequisite(s): Departmental approval: admission to program.

DENT-1311 Dental Anatomy, Histology & Embryology
02 Semester Credits

Study of the form, function and comparative anatomy of primary and permanent teeth, tooth numbering, and dentition periods. Embryologic development of the face, neck, orofacial structures and teeth. Histologic study of the gingiva, oral mucosa and attachment apparatus.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in DENT-1300 Preventive Oral Health Services I.

DENT-1320 Dental Hygiene Fundamentals**01 Semester Credits**

Reinforcement of first term clinical skills with an emphasis on radiographic technique, principles of instrumentation and patient assessment.

Lecture 00 hour. Laboratory 02 hours.

Prerequisite(s): Concurrent enrollment in DENT-1300 Preventive Oral Health Services I; and concurrent enrollment in DENT-1330 Radiology; and concurrent enrollment in DENT-1311 Dental Anatomy, Histology & Embryology, and departmental approval.

DENT-1330 Radiology**03 Semester Credits**

History and development of the x-ray, its nature and properties. Safety precautions and uses of x-rays in dentistry. Theory and practice in the fundamentals of oral radiographic technique. Image receptor placement, tube angulation, processing, scanning, mounting and interpretation of images. Film, digital sensor, phosphor plate and panoramic exposures. Students will expose image receptors on a manikin. Consists of lecture modules of instruction correlated with weekly laboratory modules.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in DENT-1300 Preventive Oral Health Services I.

DENT-1340 Dental Hygiene Care Ethics**01 Semester Credit**

Study of ethical, moral and professional topics in Dental Hygiene. Introduction to ethical theories and principles related to patient care and decision-making models. Exploration of ethical dilemmas through applied case scenarios.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval, or acceptance to the Dental Hygiene program.

DENT-1400 Preventive Oral Health Services II**05 Semester Credits**

Implementation of preventative oral health. Students provide oral health treatments to clients in the dental hygiene clinic. Topics include the special needs of patients with oral rehabilitation, pain management, geriatric concerns, oral cancer, handicaps, mental disorders, cardiovascular disease and diabetes.

Lecture 01 hour. Laboratory 12 hours.

Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1410 Current Concepts in Dental Materials**02 Semester Credits**

Physical properties of dental materials and basic principles of their preparation. Application of principles of dental materials by manipulating gypsum, cements, bases, liners, resin, amalgam, impression materials, and pit and fissure sealant materials in the laboratory and/or clinical setting.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1420 Periodontics I**02 Semester Credits**

Study of the anatomy and histology of the periodontium in health and disease. Focus on the pathogenesis of the various classifications of gingival and periodontal diseases: microbiological, host response, local and systemic risk factors. Contemporary periodontal adjuncts considered. Major research paper required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1431 Head and Neck Anatomy**02 Semester Credits**

Study of structure and function of head and neck. General anatomy of the skull, related muscles, vascular and nerve supply and lymphatics of the region considered. Focus on muscles of mastication and their relationship to the temporomandibular joint; facial and trigeminal nerves and their relationship with dental injections. Discussion on spread of infection and its clinical manifestations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DENT-1300 Preventive Oral Health Services I.

DENT-1440 General and Oral Pathology**02 Semester Credits**

General principles of pathology including, inflammation, neoplasia, metabolic and endocrine disturbances, and other systemic diseases affecting the general and oral health of the patient.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DENT-1311 Dental Anatomy, Histology & Embryology and DENT-1300 Preventive Oral Health Services I.

DENT-2100 Dental Hygiene Clinical Skills Reinforcement

01-02 Semester Credits

Designed for students desiring to improve dental hygiene clinical skills. Emphasis on the reinforcement of assessment, instrumentation, calculus detection and removal, radiographic techniques and medical emergency situations. Possible offsite clinical outreach experience included. Also appropriate for licensed hygienists returning to the workforce or students requiring remediation of skills prior to sitting for a clinical board examination.

Lecture 00 hours. Laboratory 03-06 hours.

Prerequisite(s): DENT-1300 Preventive Oral Health Services I, or departmental approval.

DENT-2200 Local Anesthesia and Pain Management

02 Semester Credits

Study of the anatomy, pharmacological and psychological aspects, systemic complications and medical emergencies related to pain management in the dental environment. Laboratory experience in the administration of local anesthesia.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): DENT-1431 Head and Neck Anatomy, or departmental approval.

DENT-2300 Preventive Oral Health Services III

05 Semester Credits

Continuation of the study and clinical application of the principles involved in the provision of oral prophylaxis and periodontal treatment, exposure of radiographs, application of preventive therapeutics and the development of individualized self-care education plans. Case Presentation in verbal and written form.

Lecture 01 hour. Laboratory 12 hours.

Prerequisite(s): DENT-1400 Preventive Oral Health Services II.

DENT-2320 Periodontics II

02 Semester Credits

Study of advanced non-surgical and surgical treatment modalities for periodontal diseases. Discussion of soft tissue management, dental implants and periodontal emergencies. Presentation on human immunodeficiency virus and its clinical manifestations. Laboratory provides practicum experience with non-surgical treatment of periodontally involved clients.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): DENT-1420 Periodontics I, and BIO-2500 Microbiology, or BIO-2520 Oral Microbiology and Immunology, or departmental approval.

DENT-2332 Pharmacology and Therapeutics

02 Semester Credits

Discussion of pharmacological effects of drugs and anesthetics, adverse reactions, and their usual indications and contraindications for preoperative and postoperative client care. Overview of agents used specifically for pain

management and medical emergencies presented, referencing the health history and dental hygiene assessment for treatment protocols.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DENT-1400 Preventive Oral Health Services II, and BIO-2500 Microbiology, or BIO-2520 Oral Microbiology and Immunology.

DENT-2340 Community Oral Health I

01 Semester Credits

Study of principles of public health dentistry. Research design as it relates to scientific journal articles. Concepts of biostatistics, public health promotion, prevention of oral disease, and dental health education. Review of special needs programs and public health dental care approach to preventive dentistry. Eight hours of community service.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DENT-1400 Preventive Oral Health Services II.

DENT-2400 Preventive Oral Health Services IV

05 Semester Credits

Continuation of clinical experience integrating social and basic sciences within the scope of dental hygiene practice. Emphasis on professionalism, time management, and advanced dental hygiene techniques. Incorporation of nutritional counseling procedures.

Lecture 01 hour. Laboratory 12 hours.

Prerequisite(s): DENT-2300 Preventive Oral Health Services III and DIET-1220 Nutrition for Dental Hygiene.

DENT-2440 Community Oral Health II

01 Semester Credits

Review of concepts introduced in Community Oral Health I. Revision of principles of public health dentistry. Concepts of program planning, epidemiology, and organization of dental care delivery system. Research design as it relates to the planning, implementing, and evaluating a community outreach project. Eight hours of community service.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DENT-2340 Community Oral Health I.

DENT-2990 Dental Hygiene Practice

01 Semester Credit

Capstone course in Dental Hygiene. Application of the ADHA Code of Ethics, healthcare laws, and standards of professional responsibility to evaluate current dental hygiene issues using evidence-based methods within scope of practice; usage of software that supports the delivery of oral health protocol; development of a plan to acquire and maintain a dental hygiene license; preparation for employment.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DENT-2300 Preventive Oral Health Services III.

DIAGNOSTIC MEDICAL SONOGRAPHY - DMS

DMS-1071 Concepts of Physics in Diagnostic Sonography
02 Semester Credits

Introduction to general physical concepts and related mathematics. Motion, major laws of physics, properties of matter, thermodynamics, basic electricity and electromagnetism, light properties, sound properties, and nuclear physics and their relation to diagnostic ultrasound discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I and MATH-1141 Applied Algebra and Mathematical Reasoning, or MATH-1190 Algebraic and Quantitative Reasoning, or MATH-1270 Intermediate Algebra or MATH-1280 Advanced Intermediate Algebra or MATH-1410 Elementary Probability and Statistics I or MATH-1510 Trigonometry, or MATH-1521 College Algebra, or MATH-152H Honors College Algebra or MATH-1580 Precalculus, or MATH-1610 Calculus I, or concurrent enrollment in any of the above courses.

DMS-1260 Pediatric Cardiovascular Anatomy, Physiology and Assessment
02 Semester Credits

Discussion of the cardiovascular system of the pediatric patient as it relates to embryological development of the heart, fetal circulation, abnormal heart formation, cardiac function and hemodynamics with an introduction to congenital cardiovascular defects. Emphasis will be placed on indications for sonographic examination based on symptoms, or preexisting conditions as it relates to the patient's history and physical examination.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2341 Anatomy and Physiology II, or departmental approval.

DMS-1303 Introduction to Sonography
02 Semester Credits

Introduction to the profession of Diagnostic Medical Sonography. Topics focus on professionalism, sonographic terminology, anatomical scanning planes, standard presentation and annotation of ultrasound images, body mechanics, and ergonomics with an overview of diagnostic related imaging specialties.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I, or concurrent enrollment; and eligibility for ENG-1010 College Composition I.

DMS-1311 Initial Sonographic Scanning
02 Semester Credits

Application of transducer manipulations, instrumentation controls, body mechanics, sonographic scanning techniques, interpersonal communication, recognition of anatomic structures, and practice of patient care skills in

laboratory setting under personal supervision of Registered Diagnostic Medical Sonographer.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): MA-1020 Medical Terminology I or concurrent enrollment; and concurrent enrollment in DMS-1401 Abdominal Sonography I, or DMS-1500 Gynecologic and Obstetrical Sonography; or DMS-1602 Echocardiography I, or DMS-1701 Vascular Sonography I, or departmental approval: admission to Diagnostic Medical Sonography program.

DMS-1320 Introduction to Sonographic Scanning
01 Semester Credits

Introduction to and evaluation of dexterity, visual acuity and sensitivity required to create a sonographic image essential to Diagnostic Medical Sonography.

Demonstration through the application and manipulation of instrumentation, body mechanics, image annotation and recognition of anatomic structures.

Lecture 0.5 hours. Laboratory 1.5 hours.

Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography, or concurrent enrollment; and DMS-1303 Introduction to Sonography, or concurrent enrollment.

DMS-1351 Patient Care Skills
01 Semester Credit

Discussion, demonstration and practice of patient care skills and practical application of basic medical techniques in a lab setting. Introducing principles of patient care including professional communication with diverse populations, safe transferring skills, assessing and attending to patient needs and infection control.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

DMS-1381 Cardiac Diagnostic Procedures
03 Semester Credits

Theory and laboratory practice of entry-level cardiovascular procedures of electrocardiography (ECG). Interpretation practice from 12 lead ECG tracings. Fundamentals of Holter monitoring, and pacemakers. Emphasis on technical accuracy in operational, problem solving and quality control skills.

Lecture 2.5 hours. Laboratory 1.5 hours.

Prerequisite(s): None.

DMS-1401 Abdominal Sonography I

04 Semester Credits

Study of adult and pediatric normal anatomy and anatomic variants, physiology, pathology, and pathophysiology of the upper abdominal, peritoneal cavity and potential spaces, non-cardiac chest, gastrointestinal system, musculoskeletal system and associated vasculature as visualized by ultrasound. Doppler and color Doppler applications for the liver, portal vein, and great vessels. Normal anatomy and anatomic variants, physiology, pathology and pathophysiology of the pediatric gastrointestinal system, hip, spine and head as visualized by ultrasound.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1500 Gynecologic and Obstetrical Sonography

04 Semester Credits

Study of normal anatomy and anatomic variants, physiology, pathology, and pathophysiology of female pelvis (non-pregnant, post-partum and postmenopausal) and female reproductive system as related to sonography. Includes monitoring infertile patient. Anatomy, physiology, anomalies, and pathology of maternal, embryo, and fetal anatomic structures during the first trimester studied. Delineates purpose and appropriateness of transabdominal versus transvaginal scanning approaches with associated patient and ethical issues. Doppler and color Doppler applications and biometrics of non-gravid uterus and ovaries discussed.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1602 Echocardiography I

04 Semester Credits

Theory of echocardiography. Study of normal anatomy, anatomic variants, physiology, pathology, and pathophysiology of the heart with ultrasound. Visual pathology recognition and identification on transthoracic examination with an understanding of etiologies of cardiovascular diseases and their affects. Basic understanding of physical concepts and how ultrasound is created and used in an echocardiogram.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1701 Vascular Sonography I

04 Semester Credits

Specialized study of cerebrovascular and peripheral arterial vascular system as related to ultrasound imaging. Focus on anatomy, hemodynamics, pathology and sonographic appearance of normal and diseased arteries. Discussion of direct/indirect testing methods and the

sonographic findings. Explanation of medical and surgical interventions used in the treatment of vascular disease.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in DMS-1311 Initial Sonographic Scanning.

DMS-1940 Field Experience I

01 Semester Credits

Supervised practical application of sonography scanning techniques in clinical setting under personal supervision of registered diagnostic medical sonographer or qualified physician. Emphasis on simple-level scanning skills. Student develops skills related to departmental processes, procedures, protocols, and patient care. Clinical experience in an ultrasound lab.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 192 hours per semester offering.

Prerequisite(s): DMS-1311 Initial Sonographic Scanning.

DMS-1950 Field Experience II

02 Semester Credits

Supervised practical application of sonography scanning techniques in clinical setting under personal and direct supervision of registered diagnostic medical sonographer or qualified physician. Emphasis on intermediate-level scanning skills. Continued performance of basic-level procedures. Student continues skill development related to departmental processes, procedures, protocols, and patient care. Clinical experience in an ultrasound lab.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 360 hours per semester offering.

Prerequisite(s): DMS-1940 Field Experience I.

DMS-2000 Sonographic Case Studies

01 Semester Credits

Integrates concepts and knowledge from clinical experiences and didactic content. Discussion and presentation of case study purpose and approach. Case studies reviewed with emphasis on analyzing, interpreting, and theorizing about the phenomenon.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DMS-2401 Abdominal Sonography II, or DMS-2500 Obstetrical Sonography, or DMS-2602 Echocardiography II, or DMS-2702 Vascular Sonography II; and concurrent enrollment in DMS-1950 Field Experience II.

**DMS-2301 Intermediate Sonographic Scanning
02 Semester Credits**

Advanced application of transducer manipulations, body mechanics, sonographic scanning techniques, interpersonal communication, recognition of anatomic structures, and practice of patient care skills in laboratory setting under personal supervision of Registered Diagnostic Medical Sonographer. Continued competency in scanning basic exams. Developing scanning skills of intermediate level sonographic procedures.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): DMS-1311 Initial Sonographic Scanning; and concurrent enrollment in DMS-2401 Abdominal Sonography II and concurrent enrollment in DMS-2500 Obstetrical Sonography; or concurrent enrollment in DMS-2602 Echocardiography II; or concurrent enrollment in DMS-2702 Vascular Sonography II.

**DMS-2330 Sonographic Pathology
03 Semester Credits**

Specialized study of common disease processes relevant to sonographic imaging. Discussion of differences between inflammatory and infectious diseases, congenital, acquired, and hereditary diseases, and benign, malignant, and metastatic neoplasia in the cardiovascular, digestive, endocrine, lymphatic, respiratory, reproductive, and urinary systems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2341 Anatomy and Physiology II; and DMS-1303 Introduction to Sonography; and MA-1020 Medical Terminology I; and eligibility for ENG-1010 College Composition I.

**DMS-2350 Sonographic Instruments and Physics
03 Semester Credits**

Physics and related mathematics as applied to ultrasound including the study of acoustical principles, sound transmission, signal processing, transducer construction, ultrasound instrumentation, quality assurance, and bioeffects of diagnostic ultrasound on soft tissue. Study of resolution, display modes, hemodynamics, Doppler principles and related instrumentation as it relates to ultrasound. Modular courses DMS-235A and DMS-235B will also meet the requirements for this course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography and eligibility for ENG-1010 College Composition I.

**DMS-235A Sonographic Principles, Performance, and Safety
02 Semester Credits**

Physics and related mathematics as applied to ultrasound including the study of acoustical principles, sound transmission, signal processing, transducer construction, ultrasound instrumentation, quality assurance, and bioeffects of diagnostic ultrasound on soft tissue.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography and eligibility for ENG-1010 College Composition I.

**DMS-235B Doppler Principles and Instrumentation
01 Semester Credits**

Study of resolution, display modes, hemodynamics, Doppler principles and related instrumentation as it relates to ultrasound.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DMS-1071 Concepts of Physics in Diagnostic Sonography and eligibility for ENG-1010 College Composition I.

**DMS-2401 Abdominal Sonography II
04 Semester Credits**

Continuation of normal anatomy and anatomic variants, physiology, pathology, and pathophysiology of the abdominal cavity and the retroperitoneum to include renal, adrenal, splenic, and lymphatic, as it pertains to diagnostic ultrasound. Normal anatomy and anatomic variants, physiology, pathology and pathophysiology of superficial structures to include the breast, neck, thyroid, and male reproductive system. Study of Doppler and Color Flow vascular applications of above mentioned organs and systems. Introduction to scanning of the carotid artery and lower extremity venous vasculature.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1401 Abdominal Sonography I; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

**DMS-2450 Breast Sonography
02 Semester Credits**

In-depth study of breast sonography. Study of breast anatomy and physiology as it pertains to medical ultrasound. Detailed discussion of breast pathologies, anatomic variants, benign and malignant lesions, and their sonographic appearances. Sonographic physics pertinent to the breast ultrasound exam will be incorporated.

Overview of related breast imaging modalities, breast surgical procedures, and breast pathology treatments.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1950 Field Experience II.

DMS-2500 Obstetrical Sonography

04 Semester Credits

Study of normal anatomy and anatomic variants, physiology, pathology and pathophysiology of the gravid pelvis and fetus during second and third trimesters as related to sonography. Focus on fetal biometry, fetal size and age assessment, fetal maturity of second and third trimester, conditions involving multiple gestations, fetal abnormalities, and effects of maternal disease on the pregnancy. Also includes sonographic procedures for amniocentesis, chorionic villus sampling, Doppler and color Doppler applications of uterine artery, umbilical cord and fetal aorta. Ethical issues in obstetric sonography and support of parental-fetal bonding discussed.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1500 Gynecologic and Obstetrical Sonography; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2602 Echocardiography II

04 Semester Credits

Introduction to physical signs symptoms, and indications for an echocardiogram reviewed for each major pathology. History and physical examination, laboratory tests, invasive and non-invasive hemodynamic evaluations used to assess various cardiovascular pathologies. Theory and manipulation of Doppler echocardiography with an introduction to interrogation of technical findings. Determination of blood flow within the normal and diseased heart using Doppler echocardiography and applying principles of hemodynamic effects learned. Color and spectral Doppler techniques discussed as applied to clinical transthoracic and transesophageal echocardiographic examinations as well as stress echocardiography.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1602 Echocardiography I; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2650 Pediatric Cardiac Sonography

03 Semester Credits

Study of normal and abnormal cardiac anatomy, fetal heart development and perinatal circulation specific to congenital cardiovascular defects. Focus on pediatric echo protocol, exam considerations for the patient population with congenital heart abnormalities (pediatric and adults). Discussion and case study review of simple to complex congenital heart abnormalities. Sonographers role in the operating room and catheterization lab.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1950 Field Experience II or departmental approval.

DMS-2702 Vascular Sonography II

04 Semester Credits

Specialized study of peripheral venous system and abdominal vessels as related to ultrasound imaging. Focus on anatomy, venous hemodynamics, pathology,

sonographic appearance of normal and diseased vessels, testing methods and sonographic impressions. Discussion of penile sonography, test validation/statistics and the correlation of related diagnostic imaging modalities.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): DMS-1701 Vascular Sonography I; and concurrent enrollment in DMS-2301 Intermediate Sonographic Scanning.

DMS-2750 Principles of Vascular Imaging for Abdomen and Cardiac Sonographers

03 Semester Credits

Course designed for sonographers experienced in scanning abdomen and cardiac ultrasound exams. Specialized advanced study of selected vascular examinations in the cerebrovascular, peripheral arterial and peripheral venous systems. Examinations include: carotid, arterial physiologic lower extremity, venous duplex upper and lower extremity. Focus on anatomy, hemodynamics, pathology, sonographic appearance of normal and diseased vessels, specific testing methods and sonographic impressions. This course is not intended to fulfill the requirements necessary to take the credentialing examination for vascular technology.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): DMS-1950 Field Experience II or departmental approval.

DMS-2940 Field Experience III

03 Semester Credits

Supervised practical application of sonography scanning techniques in clinical setting under direct supervision of registered diagnostic medical sonographer or qualified physician. Independent scanning of all levels of procedures with emphasis on accuracy and exam duration. Student focuses skill development of professional and technical accuracy and speed. Clinical experience in an ultrasound lab.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 576 hours per semester offering.

Prerequisite(s): DMS-1950 Field Experience II.

DMS-2950 Field Experience IV

01 Semester Credits

Supervised practical application of sonography scanning techniques in clinical setting under direct supervision of registered diagnostic medical sonographer or qualified physician. Independent scanning of all levels of procedures with emphasis on accuracy and exam duration. Student focuses skill development of professional and technical accuracy and speed. Clinical experience in an ultrasound lab.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 192 hours per semester

Prerequisite(s): DMS-2940 Field Experience III.

DMS-2960 Supplemental Field Experience

02 Semester Credits

Supervised practical application of sonography scanning techniques in clinical setting under personal supervision of registered diagnostic medical sonographer or qualified physician. Emphasis on intermediate scanning skills in the supplemental sonographic specialty. Student develops skills specific to the specialty as related to departmental processes, procedures, protocols, and patient care. Experience in a clinical sonography lab setting.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 360 hours per semester offering.

Prerequisite(s): DMS-2950 Field Experience IV.

DMS-2981 Specialty Registry Review

01 Semester Credits

Global review of anatomy, physiology, and pathology in relation to sonography. Test taking skills, image identification, and procedural scenarios covered. Special focus on exam content outline topics to assist student preparing to take national credentialing examinations for sonography.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DMS-2301 Intermediate Sonographic Scanning.

DMS-2983 Supplemental Specialty Registry Review

01 Semester Credit

Global review of anatomy, physiology, and pathology in relation to the specific sonographic specialty. Test taking skills, image identification, and procedural scenarios covered. Special focus on the specialty exam content outline topics to assist student preparing to take supplemental national credentialing examinations for sonography.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

DMS-2985 Physics Review

01 Semester Credit

Global review of physics in relation to sonography. Test taking skills, image identification, and physical concept scenarios covered. Special focus on exam content outline topics to assist student preparing to take national credentialing examinations for sonography.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DMS-2350 Sonographic Instruments and Physics or departmental approval.

DMS-2991 Sonography Capstone

01 Semester Credits

Capstone course in Diagnostic Medical Sonography. Assessment of one's integration of the coursework, knowledge, experience and skills as Diagnostic Medical Sonography student. Preparation for employment interview and presentation of qualifications through a

portfolio. Importance of credentialing, profession involvement and continuing education stressed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DMS-1950 Field Experience II.

DIETETIC TECHNOLOGY - DIET

DIET-1050 Sports Nutrition

03 Semester Credits

Nutrition implications for human physical and athletic performance including energy and specific nutrients. Emphasis on food selection to enhance performance and nutrition recommendations with regard to varying athletic activities. Calculation of individual energy needs based on weight and activity level. Assessment of body composition and appropriate use of ergogenic aids. Designed for the casual exerciser, elite athlete, coaches, trainers, and persons recognizing the importance of nutrition to fitness.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

DIET-1070 Weight Management Techniques for Fitness Trainers

01 Semester Credit

Fitness trainers will learn appropriate weight management techniques used to teach clients weight management strategies. Determining healthy weight, energy balance, role of exercise and popular weight loss diets discussed. Topics such as eating disorders and the female athlete included.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

DIET-1200 Basic Nutrition

03 Semester Credits

A scientific study of nutrition designed for nursing, other health care providers and educators. Students will investigate the roles of the nutrients in the functioning of the human body. Overview of nutrient recommendations, food sources and functions of the nutrients, energy requirements, weight control, vegetarianism, and supplement use. Dietary recommendations and food patterns applied to culture, and prevention of nutrition related diseases in a changing society.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

OAN Approved: OHL016

DIET-1220 Nutrition for Dental Hygiene

02 Semester Credits

Nutrition principles related to personal and client care. Dental hygiene students will learn how to apply sound nutrition principles to assessing, diagnosing, planning, implementing and evaluating total care of clients, and how to contribute to nutrition well-being of client.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

DIET-1310 Introduction to Dietetics

02 Semester Credits

Students explore information literacy, professionalism, ethics, educational requirements and governance of the dietetics profession. Includes application of communication, research and self-assessment practices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

DIET-1320 Nutrition Applications

01 Semester Credit

Apply nutrition information to variety of activities to demonstrate competency at dietetic technology student level. The Food Guide Pyramid and Exchange System used to write a variety of menus: low fat, high fiber, low calorie, high protein and vegetarian. Medical terminology and abbreviations used in patient charting included.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I, and DIET-1200 Basic Nutrition or concurrent enrollment.

DIET-1331 Fundamentals of Food Production

04 Semester Credits

Application of scientific principles, techniques, and methods of food production for normal and therapeutic meals. Use of food production equipment appropriate for different food service systems. Application of nutrition criteria and quality assurance standards.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1060 Survey of Mathematics or higher, and DIET-1200 Basic Nutrition, and DIET-1320 Nutrition Applications.

DIET-1580 Cost Control Procedures

01 Semester Credit

Study of basic food cost control procedures, financial statements and budget preparation as they relate to nutrition services.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning, or higher.

DIET-1590 Purchasing Procedures

01 Semester Credits

Applied Management principles required to deliver food and nutrition programs and services including continuous quality management of food and nutrition services. Topics

include: food specifications, procurement systems, and receiving and inventory processes.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-1060 Survey of Mathematics or higher.

DIET-1600 Introduction to Supervision

03 Semester Credits

Analysis of food service supervision through use of theories, principles and terminology. Emphasis on management theories, supervision practices, performance/quality improvement, customer satisfactions and outcomes.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and departmental approval: admission to Dietetic Technology Program.

DIET-1850 Food and Nutrition Systems Practicum

04 Semester Credits

Application of techniques in food production; equipment use and care; employee management; information flow; documentation; sanitation regulations; food service personnel recruitment, training and retention; and quality assurance in a health care facility. Activities provide students opportunity to demonstrate application of knowledge acquired in previous and concurrent nutrition and diet therapy courses.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): DIET-1200 Basic Nutrition, and DIET-1320 Nutrition Applications.

DIET-1940 Dietary Managers Field Experience

01 Semester Credit

Supervised work experience. Twelve clock hours per week gaining practical hands-on-work experience supervising a food service department and conducting initial nutritional assessments on patients. Program manager and/or dietetic technology instructor must approve the student work experience sites. The student spends a minimum of 50 hours under the direct supervision of a registered dietitian. Recommended for healthcare food and nutrition personnel.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 12 clock hours per week.

Prerequisite(s): Departmental approval.

DIET-2301 Medical Nutrition Therapy I**03 Semester Credits**

Basic nutrition knowledge applied to medical nutrition therapy and the nutrition care process. Apply medical nutrition therapy using evidence based practice with practice cases.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): DIET-1200 Basic Nutrition, and DIET-1320 Nutrition Applications.

DIET-2311 Medical Nutrition Therapy II**03 Semester Credits**

Application of nutrition knowledge to specialized medical nutrition therapy. Moderate to high nutrition risk factors examined. Internal medical and renal disease examined.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): DIET-2301 Medical Nutrition Therapy I.

DIET-2320 Medical Nutrition Therapy III**02 Semester Credits**

Application of evidence based practice of medical nutrition therapy in cardiovascular disease and diabetes.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DIET-2311 Medical Nutrition Therapy II, or concurrent enrollment or departmental approval.

DIET-2410 Life Cycle Nutrition - Pregnancy and Lactation**01 Semester Credit**

Nutritional requirements and concerns for pregnant women, lactating women and infants. Topics include strategies to ensure adequate nutrition through dietary selection and promotion of health, and nutrition intervention to reduce risk of nutrition-related concerns for each group.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DIET-1200 Basic Nutrition.

DIET-2420 Life Cycle Nutrition - Nutrition for Children**01 Semester Credit**

Explore nutritional requirements and concerns for children. Includes strategies to ensure adequate nutrition through dietary selection and promotion of health and nutrition interventions to reduce risk of nutrition-related diseases.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DIET-1200 Basic Nutrition.

DIET-2430 Life Cycle Nutrition - Nutrition through Adulthood**01 Semester Credits**

Explore the adulthood nutrition life cycle. Includes assessments, health concerns, including cardiovascular disease and diabetes, alternative and complementary care, community nutrition programs and support for low income persons. Introduction to geriatric nutrition and nutritional requirements for the elderly.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): DIET-1200 Basic Nutrition.

DIET-2501 Nutrition Applications in Long Term Care**02 Semester Credits**

Concepts and application of nutrition care management processes in the long term care setting. Assessment and documentation of nutritional status according to current regulatory standards. Discussion of quality of life issues specific to nutritional care of long term care resident. Other topics include food/drug interactions, special feeding, alternative feeding, and the interdisciplinary team approach to care.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DIET-2311 Medical Nutrition Therapy II, and concurrent enrollment in DIET-2862 Geriatric Nutrition Practicum.

DIET-2850 Medical Nutrition Care Practicum**02 Semester Credits**

Application of dietetic technician skills required in medical nutrition care of patients or residents in acute or long-term care facilities under supervision of registered dietitian. Application and documentation of care plans and patient education. Course provides forum for discussion of practicum experience.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): DIET-1850 Food and Nutrition Systems Practicum; and concurrent enrollment in DIET-2311 Medical Nutrition Therapy II.

DIET-2862 Geriatric Nutrition Practicum**02 Semester Credits**

Practicum experience under the supervision of a registered dietitian. Delivery of nutrition care services in a long term care setting. Nutrition assessment, intervention and health promotion.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): Concurrent enrollment in DIET-2501 Nutrition Applications in Long Term Care, and DIET-2430 Life Cycle Nutrition - Nutrition through Adulthood or concurrent enrollment.

DIET-2863 Community Nutrition Practicum**02 Semester Credits**

Practicum experience under the supervision of a registered dietitian. Delivery of nutrition care services to community based agencies, ambulatory health settings, or social service agencies. Nutrition intervention, assessment and health promotion.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): DIET-2410 Life Cycle Nutrition - Pregnancy and Lactation, or concurrent enrollment, DIET-2420 Life Cycle Nutrition - Nutrition for Children, and DIET-2430 Life Cycle Nutrition - Nutrition through Adulthood.

DIET-2990 Dietetic Technology Professional Development Skills
02 Semester Credits

Capstone course in Dietetic Technology. Integration of knowledge acquired in basic, technical and non-technical areas in preparation for professional roles and life-long professional growth and development.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): DIET-2501 Nutrition Applications in Long Term Care, or concurrent enrollment.

EARLY CHILDHOOD EDUCATION - ECED

ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs
04 Semester Credits

Introduction to child development and philosophy of early childhood education, including developmentally appropriate practices in a variety of child care settings. Identification of effective multicultural and inclusive early childhood learning environments. Recognition of the importance of integrated curriculum as teaching strategy for young children. Introduction to role of the early childhood teacher as facilitator, and the development of effective family/center relationships. Observations in early childhood education settings. Modular courses ECED-101A, ECED-101B, ECED-101C and ECED-101D together will also meet degree requirements for this course.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment.

OAN Approved: OED005

ECED-1301 Language and Literacy in an Integrated Curriculum
03 Semester Credits

Overview of spoken and written language development of young children. Theories and research related to language and literacy development and the role of the teacher in facilitating this development. Extensive practice in learning how to listen and talk with young children. Planning, implementing and evaluating developmentally appropriate multicultural, and anti-bias experiences, environments and materials for language discovery and learning. Selection and integration of appropriate inclusive literature in early childhood settings. Five hours of service learning required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs; or ECED-101A Children's Development and Types of Programs in Early Childhood, and ECED-101B Theoretical Foundations of Early Childhood, and ECED-101C Curriculum and Inclusion in Early Childhood, and ECED-101D Early Childhood Curriculum in the Classroom.

ECED-1311 Art and Creative Expression in an Integrated Curriculum
03 Semester Credits

Exploration of planning, organizing, implementing, and evaluating a developmentally appropriate curriculum that fosters the creative and aesthetic development of young children. Preparation, organization, and maintenance of early childhood environment emphasized. Students in lecture/lab setting experience extensive variety of art media suitable for young children. Five hours of service learning required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-1321 Math and Science Inquiry in an Integrated Curriculum
03 Semester Credits

Introduction to extensive variety of curricular experiences which enhance young children's intellectual curiosity and critical thinking skills. Role of teacher in facilitating science, math, problem solving experiences, scientific methods/learning process and constructivist theory explored. Students participate in lecture/lab setting with variety of hands on problem solving activities. Five hours of Service Learning required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-1331 Music & Movement in an Integrated Curriculum

03 Semester Credits

Exploration of appropriate methods and materials for implementation of music in early childhood curriculum. Impact of music experience on cognitive, socio-emotional and physical/motor development examined. Connections between emergent literacy, music and brain development and constructivism explored. Includes creative self expression using movement, sounds, songs, musical instruments, selection of recordings, multicultural experiences in music and use of community resources. Five hours of service learning required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-1400 Administration and Leadership in Early Childhood

04 Semester Credits

Overview of major administrative principles, types of child care centers, legislative mandates, center policies and procedures, insurance ramifications, design of physical facilities, purchasing, budgeting, recordkeeping, and professional public relations. Programmatic formats as related to philosophical assumptions, educational theories and environmental design with respect to infants, toddlers, preschool and school age settings. Modes of staff support and management including problem solving and conflict resolution surveyed.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs or concurrent enrollment; or ECED-101A and ECED-101B and ECED-101C and ECED-101D.

ECED-1540 Programming and Adjustments in Infant/Toddler Care

03 Semester Credits

Focus on consolidation and integration of understandings, skills and dispositions associated with becoming effective, knowledgeable caregivers of infants and toddlers. Includes designing responsive learning environments, early experiences, family interactions and assessment process in work with young children and families. Emphasis on professional development, family advocacy and ethical considerations for caregivers. Application of brain development and learning principles discussed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ECED-2500 Infant/Toddler Development, Relationships, and Programs or concurrent enrollment; and departmental approval.

ECED-1550 Experiences with Infants

01 Semester Credit

Introduction to developmentally appropriate practices in support of infant development and growth.

Developmental knowledge, temperament, establishing relationships, communication strategies, preparing and maintaining a healthy and safe environment and presenting supportive and appropriate experiences with infants.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ECED-1540 Programming and Adjustments in Infant/Toddler Care or concurrent enrollment; and ECED-2500 Infant/Toddler Development, Relationships, and Programs or concurrent enrollment; concurrent enrollment in ECED-1850 Infants in Early Childhood Setting Practicum; and departmental approval.

ECED-1570 Experience with Toddlers

01 Semester Credit

Introduction to developmentally appropriate practices in support of toddler development. Developmental knowledge, temperament, establishing relationships, communication strategies, positive guidance, appropriate supportive experience planning and preparing and maintaining a healthy and safe environment for toddlers.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ECED-1540 Programming and Adjustments in Infant/Toddler Care; and ECED-2500 Infant/Toddler Development, Relationships, and Programs or concurrent enrollment; concurrent enrollment in ECED-1870 Toddlers in Early Childhood Setting Practicum; and departmental approval.

ECED-1850 Infants in Early Childhood Setting Practicum

02 Semester Credits

Participation in assigned early childhood settings under college supervision to develop effective skills with infants, families and staff. Discussion of practicum experiences with integration of knowledge, skills and dispositions essential for infant caregivers emphasized.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): ECED-1540 Programming and Adjustments in Infant/Toddler Care or concurrent enrollment; and ECED-2500 Infant/Toddler Development, Relationships, and Programs or concurrent enrollment; and concurrent enrollment in ECED-1550 Experiences with Infants; and departmental approval.

ECED-1860 Experience with Young Children in Early Childhood Settings

03 Semester Credits

Practice within diverse early childhood settings. Students introduced to developmentally appropriate care and education of young children within assigned setting. Preparation, organization and maintenance of an educational environment, responsive interaction and communication strategies, and planning and presentation of experiences for young children emphasized. Experience provided in relating to wide array of individuality among children. Cultural, familial and developmental diversity, adjustment of children to group setting and development of positive work relationships emphasized.

Lecture 01 hour. Laboratory 00 hours.

*Other Required Hours: Practicum: 7 hours per week.
Seminar: 1 hour per week.*

Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs and ECED-1301 Language and Literacy in an Integrated Curriculum and departmental approval.

ECED-1870 Toddlers in Early Childhood Setting Practicum

02 Semester Credits

Participation in assigned early childhood education settings under college supervision to develop effective skills with toddlers, families, and staff. Discussion of practicum experiences and integration of knowledge skills and dispositions critical for toddler caregivers emphasized.

Lecture 00 hours. Laboratory 00 hours.

*Other Required Hours: Practicum: 7 hours per week.
Seminar: 1 hour per week.*

Prerequisite(s): ECED-1540 Programming and Adjustments in Infant/Toddler Care; and ECED-2500 Infant/Toddler Development, Relationships, and Programs or concurrent enrollment; and concurrent enrollment in ECED-1570 Experience with Toddlers; and departmental approval.

ECED-2300 Child Behavior and Guidance

03 Semester Credits

Discussion and development of a variety of guidance and classroom management strategies for young children based upon child development and anti-bias principles. Emphasis on preparing, organizing, and maintaining physically and psychologically safe environment. Establishment and maintenance of positive, collaborative family relations and supportive, professional, ethical behavior emphasized. Consequences of stress and trauma on child development and behavior explored. Skills strengthened in observing and assessing child behavior to enhance planning for the growth of young children.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-2401 Families, Communities & Schools

03 Semester Credits

Develop skills to work with families in fostering optimal development and growth of their children. Emphasis on interpersonal techniques that will promote positive relationships with families, schools, and community. Explore various models for family involvement. Focus on working with socially, culturally, and linguistically diverse families.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I; and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

OAN Approved: OED006

ECED-2500 Infant/Toddler Development, Relationships, and Programs

03 Semester Credits

Comprehensive coverage of broad areas of infant and toddler development and care with special emphasis on developmentally appropriate practices for adults who work with children ages birth to three. Major developmental milestones in infant and toddler growth; creation of safe, healthy, and supportive learning environments for children under three. Selection of materials and equipment for center or home-based care; analysis of professional standards for high quality interactions between adults and very young children.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-2600 CDA Professional Portfolio

01 Semester Credits

Focus on professional development and learning experiences that are demonstrated through a collection of resources, reflective statements of competence, and written professional philosophy to utilize as a tool throughout early childhood education career.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I; and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-2700 Including Children with Special Needs
03 Semester Credits

Survey course focusing on children with special needs and their families. Emphasis on observation, identification, referral and adaptations of the environment for inclusion of children with disabilities. Family centered interventions, community resources, legal mandates and communication skills necessary to work with families, children, and specialists in a variety of settings included. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): ENG-1010 College Composition I and ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

ECED-2870 Early Childhood Education Student Teaching Practicum
02 Semester Credits

Capstone course in early childhood education. Participation in assigned early childhood education settings under college supervision to develop effective skills with young children, families, and staff. Integration of principles of child development in designing and implementing developmentally appropriate curriculum, assessment and professionalism. Creation of inclusive environments through physical design and respectful, sensitive interactions. Each student will spend 240 hours per semester in field experience. *Lecture 00 hour. Laboratory 00 hours.*

Other Required Hours: Practicum: 16 hours per week. Prerequisite(s): ECED-1311 Art and Creative Expression in an Integrated Curriculum, ECED-1321 Math and Science Inquiry in an Integrated Curriculum, ECED-1331 Music & Movement in an Integrated Curriculum, ECED-1860 Experience with Young Children in Early Childhood Settings; concurrent enrollment in ECED-2990 Early Childhood Education Student Teaching Seminar, and departmental approval: students must meet with a faculty coordinator prior to registration.

ECED-2990 Early Childhood Education Student Teaching Seminar
03 Semester Credits

Capstone course in early childhood education. Student will focus on consolidation and integration of the knowledge, skills and dispositions associated with becoming an effective, knowledgeable lead/group teacher of young children. Focus includes planning, implementing and assessing curriculum, creating appropriate learning environments, developing professional conduct, and recognizing ethical issues. *Lecture 02 hours. Laboratory 00 hours.*

Other Required Hours: Seminar: 1 hour per week. Prerequisite(s): ECED-2300 Child Behavior and Guidance, or concurrent enrollment; ECED-2401 Families, Communities & Schools, or concurrent enrollment; ECED-2500 Infant/Toddler Development, Relationships, and Programs, ECED-2870 Early Childhood Education Student Teaching Practicum, and students must meet with a faculty coordinator prior to registration or departmental approval.

EARTH SCIENCE - ESCI

ESCI-1030 Survey of Earth Science
03 Semester Credits

[This course is cross-listed as PSCI-1030. Credit can only be earned once for either course.] Survey of geology of Earth and its impact on the environment. Earth's structure and composition, earthquakes, plate tectonics, hydrologic cycle, weather, resources and energy alternatives, and current related issues. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

ESCI-103L Survey of Earth Science Laboratory
01 Semester Credits

[This course is cross-listed as PSCI-103L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on rocks and minerals, soils, weather, plate tectonics, energy and may include other related earth science activities. Laboratory activities complement and enrich related lecture course. *Lecture 00 hours. Laboratory 03 hours.*

Prerequisite(s): ESCI-1030 Survey of Earth Science or concurrent enrollment.

ESCI-1040 Weather Studies
03 Semester Credits

An integrated science course that covers current facts, theories, and technological methods regarding the study of the weather and climate. Weather prediction and real-time weather data analyses are important facets of this course. *Lecture 02 hours. Laboratory 02 hours.*

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

ESCI-1310 Physical Geography
03 Semester Credits

Introductory study of physical elements of geography. Includes Earth-Sun relationships, maps, atmospheric components and interactions, elements and controls of weather and climate, water resources and their distribution, vegetation associations, animal associations, ecological relationships, soil types, landforms, and plate tectonics. World distribution, causal relationships and significance to man stressed. To fulfill laboratory science requirements, students should also enroll in related laboratory course. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II. OAN Approved: OSS006 (Course 1 of 2, both must be taken)

ESCI-131L Laboratory in Physical Geography

01 Semester Credit

Laboratory studies include the scientific method, map interpretation and construction, remote sensing, energy transfers, weather components, climate classification, hydrology, pedology, ecology, plant and animal geography, and plate tectonics.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ESCI-1310 Physical Geography or concurrent enrollment.

OAN Approved: OSS006 (Course 2 of 2, both must be taken)

ESCI-1410 Physical Geology

03 Semester Credits

Topics include materials and structures of the Earth; processes and agencies which change Earth's crust. Mineral composition of rocks; work of gravity, water, winds, and glaciers as agents of erosion; volcanoes and earthquakes as forces which change Earth's surface. To fulfill laboratory science requirements, students should also enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

OAN Approved: OSC011 (Course 1 of 2, both must be taken)

ESCI-141L Laboratory in Physical Geology

01 Semester Credit

Laboratory studies include minerals, rocks, volcanoes, geologic dating, topographic maps and determination of depositional and erosional features, earthquake epicenter locations, folds and faults, interpretation of geologic maps, plate tectonic processes and boundaries, and field work to become familiar with local geology. Regularly scheduled field trips are integral part of this course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ESCI-1410 Physical Geology or concurrent enrollment.

OAN Approved: OSC011 (Course 2 of 2, both must be taken)

ESCI-141H Honors Physical Geology

03 Semester Credits

Honors course in Physical Geology. Materials and structures of the Earth; processes and agencies by which the Earth's crust has been and is being changed; rocks and their mineral composition. Work of gravity, water, winds, and glaciers as agents of erosion; volcanoes and earthquakes as forces which change the surface of the Earth. Emphasis on the effects geological events and resources have had on human civilization. To fulfill laboratory science requirements, students should also enroll in Laboratory in Physical Geology.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I.

ESCI-1510 Historical Geology

03 Semester Credits

Geologic history of the earth and biota. Special emphasis on North America. Topics include plate tectonics, relative and absolute dating, rocks and their significance as indicators of environment, interpretation of geologic maps, evolution, fossilization, and major groups of fossils. To fulfill laboratory science requirement, students should also enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

OAN Approved: OSC012 (1 of 2 courses, both must be taken)

ESCI-151L Laboratory in Historical Geology

01 Semester Credit

Laboratory studies include mineral and rock identification, significance of rock type, relative and absolute dating, stratigraphy, fossilization, fossil identification and significance, evolutionary patterns, cladistics, geology and paleontology of the major geologic time divisions, and field work. Required field work is integral part of this course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ESCI-1510 Historical Geology or concurrent enrollment.

OAN Approved: OSC012 (2 of 2 courses, both must be taken)

ESCI-1610 Geology of the National Parks

03 Semester Credits

Studies of each park will include reasons why each area was set apart as a park, its geologic history, its present lithology and topography, and influences of lithology and topography on climatic and biotic factors (and vice versa). Ecological and geologic problems that have arisen because of presence of humans in parks or in adjacent areas also considered. To fulfill laboratory science requirement, students should also enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

ESCI-161L Laboratory in Geology of the National Parks

01 Semester Credit

Laboratory studies include use of topographic maps, aerial photos, remote sensing images, and geologic maps; volcanism and earthquakes, physiographic provinces; identification of igneous, sedimentary and metamorphic rocks and structures; studies of depositional and erosional features of streams, winds, glaciers, and waves; fossil identification; analyses of climatic and biological data; plate tectonics; investigations into ecological problems of many of national parks. Field work is required.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ESCI-1610 Geology of the National Parks or concurrent enrollment.

ECONOMICS - ECON

ECON-1210 Survey of Economics

03 Semester Credits

Overview of economic principles and problems designed to provide general understanding of structure, organization and operation of our economy. Relationship of economy to our social and political welfare and its determination of the fundamental standard of living, on both macro and micro levels.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

ECON-1220 Economic Development of the American Economy

03 Semester Credits

Evolutionary development of American economic system. Review of changes in economic and organizational structure, emphasizing application of fundamental economic explanation of change.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

ECON-2610 Principles of Macroeconomics

04 Semester Credits

Non-sequential course which introduces language, tools, methods and topics of economic analysis. Study of broad economy including measurement and analysis of economic activity, government and its roles in a market system, the banking system, monetary policy, economic growth and international economics.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I or eligibility for MATH-1060 Survey of Mathematics.

UAN Approved: OSS005

ECON-2620 Principles of Microeconomics

04 Semester Credits

Non-sequential course which introduces language, tools, methods and topics of economic analysis. Study of detailed economy at the firm and industry level with emphasis on market theory (supply/demand), production, and price and output determination as they vary by market structure, and includes current problems and policy concerns.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I or eligibility for MATH-1060 Survey of Mathematics.

UAN Approved: OSS004

ECON-2700 The Economics of Money, Banking, and Financial Markets

03 Semester Credits

Examines the economic roles played by financial markets, financial institutions, and money in the determination of business and consumer behavior, personal wealth, and the performance of the economy. Studies key markets,

including the bond and stock markets; key institutions, including banks and the Federal Reserve. Monetary theory and policy discussed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ECON-2610 Principles of Macroeconomics, and ECON-2620 Principles of Microeconomics.

EDUCATION - EDUC

EDUC-1011 Introduction to Education

03 Semester Credits

Designed to introduce the student to the broad and complex field of public education. Emphasis on personal and professional characteristics required for successful teaching. This course also requires 18 hours of field observation in primary and/or secondary school classrooms within the term.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

UAN Approved: OED001

EDUC-1020 Educational Technology

03 Semester Credits

Identify, select, evaluate, use, and troubleshoot instructional technology, electronic media, operating and utility software to meet curricular goals. Use instructional design and integration strategies to design and produce developmentally and culturally appropriate materials that align with PRAXIS II and INTASC/Ohio standards.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

UAN Approved: OED002

EDUC-1411 Individuals with Exceptionalities

03 Semester Credits

Focus on variety of disabilities, giftedness, and talent among students in educational settings. Multidisciplinary team process, special needs and services, attitudes toward exceptional students, minorities, parenting exceptional children, and public laws and policies will be defined and discussed. One field observation is required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): EDUC-1011 Introduction to Education.

UAN Approved: OED004

EDUC-2050 Human Diversity in Education

03 Semester Credits

Relationships between a variety of socio-cultural patterns of students and communities and abilities to instruct. Development of strategies for increasing the educational potential of all students.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): EDUC-1011 Introduction to Education, or

ECED-1010 Introduction to Early Childhood Education:

Children's Development and Programs.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY - EET

EET-1015 Introduction to Computer Maintenance and Repair

03 Semester Credits

Introduction to careers in the field of personal computer maintenance and repair. Overview of hardware and software concepts associated with personal computer systems. Survey of techniques and methods used by technicians to maintain, repair, troubleshoot and upgrade personal computers. Overview of techniques and skills necessary for career opportunities in computer user support fields. Coverage of both interpersonal as well as technical abilities necessary for success in this industry.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications or concurrent enrollment.

EET-1035 Operating Systems and Software for PC Technicians

04 Semester Credits

Hands-on course provides both theoretical and practical training with computer operating system setup, maintenance, upgrading, troubleshooting and support. Lab activities provide direct experience with techniques and tools used to install, configure, operate, secure and troubleshoot operating system software in desktop and mobile devices. Fundamental career training for computer service technicians.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): EET-1015 Introduction to Computer Maintenance and Repair, or concurrent enrollment.

EET-1055 Computer Hardware Support

04 Semester Credits

Assemble computer components, install, configure and maintain devices and PCs, properly and safely diagnose, resolve and document common hardware issues while applying troubleshooting skills. Focuses on providing appropriate customer support. Designed in conjunction with industry standard training and certification guidelines.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): EET-1015 Introduction to Computer Maintenance and Repair.

EET-1081 Computer User Support

01 Semester Credit

Overview of techniques and skills necessary for career opportunities in computer user support fields, with particular emphasis on process of microcomputer service and repair. Coverage of both interpersonal and technical abilities necessary for success in this industry. Problem-solving strategies for common user support issues,

customer service skills, help desk operation, documentation requirements and information resources for user support.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Recommend IT-1010 Introduction to Microcomputer or proficiency in Windows and MSOffice.

EET-1100 Introduction to Robotics

02 Semester Credits

Introduction to direct current circuits, binary and hexadecimal numbering systems, signed numbers and elementary programming language statements (confined to programming a robot in laboratory component).

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

EET-1130 Basic Audio Electronics

03 Semester Credits

Basic DC and AC circuits, amplifier theory, audio distortion, electronic test equipment operation and soldering techniques. Designed for non-EET majors.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1060 Survey of Mathematics or higher level math, or departmental approval.

EET-1140 Productivity Tools for Engineering

02 Semester Credits

Productivity Tools for Engineering exposes the students to word processing, spread sheets and CAD (Computer Aided Design) programs directed at the electronic engineering technology environment.

Lecture 00 hour. Laboratory 04 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; and eligibility for MATH-1280 Advanced Intermediate Algebra; or departmental approval.

EET-1150 Basic Robotics with Math

02 Semester Credits

Course provides an introduction to robotic principles using C programming with an emphasis on math.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

EET-1160 Direct Current Circuits I

02 Semester Credits

Basic introduction to Direct Current circuits that includes Ohms law, Kirchoff's Voltage Law (KVL), Kirchoff's Current Law (KCL), wire sizes, engineering notation, electric units, series circuits, parallel circuits, series/parallel circuits and surface mount component troubleshooting.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra, or concurrent enrollment; or departmental approval.

EET-1170 Direct Current Circuits II**02 Semester Credits**

Direct-current (DC) circuits is the second class in Direct Current courses. Focus on Ohms Law, Kirchhoff's Laws, Mesh and Nodal circuit analysis, Thevenin's and Norton's Theorems as applied to series, parallel, and series-parallel circuit networks. Computer simulation and practical laboratory experience using electrical measuring instrumentation to observe and verify theories and concepts presented during lectures.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): EET-1160 Direct Current Circuits I, or concurrent enrollment or departmental approval.

EET-1180 Surface Mount Soldering**01 Semester Credit**

Develop skills using surface mount soldering equipment and techniques to facilitate design, construction and rework of circuit boards.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

EET-1210 AC Electric Circuits**03 Semester Credits**

Fundamentals of alternating current (AC) circuits involving resistance, capacitance, and inductance. Sinusoidal voltage, current power, phase, resonance, and frequency response of basic circuit elements in series, parallel, and series-parallel connections as analyzed using Kirchhoff's laws, Mesh, Nodal, and Bridge Network analysis, Delta-Wye conversions, Superposition, Thevenin's, Norton's and Maximum Power Transfer theorems. Decibels, filters, Bode plots, Fourier series, polyphase transformers, and system analysis are studied. Computer simulation and practical laboratory experience using AC instrumentation for measuring series-parallel networks to observe and verify theory and concepts presented during lectures.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1170 Direct Current Circuits II, and MATH-1510 Trigonometry, or concurrent enrollment; or departmental approval.

OAN Approved: OET003/OET006 (course 2 of 2, both must be taken)

EET-1220 Circuits and Electronics**03 Semester Credits**

Direct-current (DC) and alternating-current (AC) circuit fundamentals involving resistance, capacitance, and inductance. Electrical quantities and units of measurements: Ohm's law, Kirchoff's laws, network analysis and network theorems presented as applied to series, parallel, and series/parallel DC and AC circuits. Topics include RC and RL time constants, phasors, operators, impedance, admittance, and power triangles, power factor correction, polyphase systems, and transformers. Computer simulation, and practical laboratory experience using electrical measuring

instrumentation to observe and verify theories and concepts presented during lectures.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1510 Trigonometry, or concurrent enrollment; or departmental approval.

EET-1240 Digital Circuits/Microprocessors I**03 Semester Credits**

Introduction to binary number system and to all logic gates used in digital circuits. Boolean algebra, logic gate equivalents and Karnaugh maps are used to simplify Boolean logic equations and various logic circuits.

Decoders, multiplexers, latches, flip-flops, counters, and shift registers studied in detail. Laboratory experiments to reinforce lecture material used throughout course.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1160 Direct Current Circuits I or concurrent enrollment, or departmental approval.

EET-1302 Cisco I: Basic Networking Technologies**03 Semester Credits**

Introduction to architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum which enables students to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes to provide a foundation for the curriculum.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2310 TCP/IP.

EET-1312 Cisco II: Basic Routing and Switching**03 Semester Credits**

Covers the architecture, components, and operations of routers and switches in a small network. Ability to configure a router and a switch for basic functionality, including preparing students to troubleshoot and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing, in both IPv4 and IPv6 networks.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1302 Cisco I: Basic Networking Technologies, or concurrent enrollment.

EET-1910 Directed Practice Electric Utility Technology I 04 Semester Credits

Supervised field practice of electrical overhead lineman job duties in a setting under direct supervision of electric company personnel. Focuses on the installation of services, street lighting, and secondary circuits. Includes various pole framing techniques and guying methods as well as an overview of transmission and distribution of electrical systems, rigging safety awareness, Occupational Safety and Health Administration (OSHA) training and first-aid certification. Safety requirements emphasized throughout the course.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week on site (300 hours per semester).

Prerequisite(s): Concurrent enrollment in ISET-1410 Applied Electricity I, and departmental approval: admission to Electric Utility Technology program.

EET-1915 Directed Practice Substation Utility Technology I 04 Semester Credits

Supervised practical applications of electrical substation worker job duties in a setting under direct supervision of electric company personnel. Emphasis on safety practices and regulations, using substation vehicles and equipment, and procedures and tasks related to use and maintenance of an electrical substation.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week on site (300 hours per semester).

Prerequisite(s): Concurrent enrollment in ISET-1410 Applied Electricity I, and departmental approval: admission to Electrical Utility Technology Program.

EET-1920 Directed Practice Electric Utility Technology II 04 Semester Credits

Supervised practical applications of electrical overhead line worker job duties in a setting under personal supervision of electric company personnel. Emphasis on skills required to perform work on secondary voltage circuits. Emphasis on the installation of services, street lighting, and secondary circuits, bucket truck familiarization and bucket rescue. Overview of distribution electrical systems, and Occupational Safety and Health Administration (OSHA) rules. Safety topics include: Work Zone Traffic Control; Minimum Approach Distances; Rubber Protective Equipment; and Knowledge of UD Excavation/Trenching/Shoring.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week at site (300 hours per semester).

Prerequisite(s): EET-1910 Directed Practice Electric Utility Technology I, and concurrent enrollment in ISET-1420 Applied Electricity II.

EET-1925 Directed Practice Substation Utility Technology II 04 Semester Credits

Second in a four part series providing the student with a broader skill set as well as enhanced knowledge and skill level necessary to safely assist in the performance of routine repairs on distribution and power transformers, bushings, circuit breakers, disconnect switches, control equipment and other de-energized electrical equipment used in the distribution of electrical energy.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 20 hours per week at site (300 hours per semester).

Prerequisite(s): EET-1915 Directed Practice Substation Utility Technology I, and concurrent enrollment in ISET-1420 Applied Electricity II.

EET-2111 Industrial Electronics I 03 Semester Credits

Construction, theory of operation, performance characteristics and application of DC motors, DC auxiliary devices, AC single phase transformers, AC three phase transformers, AC three phase motors. Specification and characteristics of power switching devices like triacs, Metal Oxide Semiconductor Field Effect Transistors (MOSFETs), Insulated Gate Bipolar Transistors (IGBTs), opto-isolators, switching power supplies and applicable safety standards.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1210 AC Electric Circuits, or departmental approval.

EET-2120 Electronics I 03 Semester Credits

Course includes the most common solid-state devices used in electronic circuits: silicon and germanium diodes, zener diodes, Light Emitting Diodes (LEDs) Bipolar Junction Transistors (BJTs), and Field Effect Transistors (FETs). Graphical and analytical DC and AC analysis of various electronic circuits used. Computer circuit analysis program MultiSim used to predict DC voltages and currents and frequency response of different circuits.

Laboratory experiments reinforce topics studied in lecture.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1210 AC Electric Circuits and MATH-1510 Trigonometry; or ATTC-1340 AC Circuits/Telephony; or departmental approval.

EET-2131 Digital Communication Fundamentals
03 Semester Credits

A continuation of Signal Analysis course that expands on elementary digital modulation techniques, types of binary signals, speech coding, signal analysis and network theory. Topics include sampling, coding, bandwidth for baseband digital signals, data communications protocol including TCP/IP and error correction/detection techniques.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2170 Signal Analysis, or concurrent enrollment.

EET-2140 Digital Circuits/Microprocessors II
03 Semester Credits

Introduction to microprocessor theory and function. Topics include programming concepts and program development, bus configuration, memory, timing relationships, data input and output techniques, interrupt handling and introduction to support chips.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1240 Digital Circuits/Microprocessors I.

EET-2150 Printed Circuit Layout
01 Semester Credits

Examines use of contemporary program(s) to lay out printed circuit board in single and multiple layers. Design rules, current return paths, crosstalk and other anomalous conditions are explored.

Lecture 00 hour. Laboratory 03 hours.

Prerequisite(s): EET-2120 Electronics I, or concurrent enrollment or departmental approval.

EET-2170 Signal Analysis
03 Semester Credits

Introduces bandwidth, frequency response, noise, modulation, spectrum analysis and distortion and how they apply to design, troubleshooting and circuit operation.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1210 AC Electric Circuits, or departmental approval.

EET-2180 EET Applied Calculus
03 Semester Credits

An introductory course to calculus with an emphasis on electrical/electronic applications. Topics include: limits; differentiation and graphical applications of the derivative; and indefinite and definite integration and applications. Emphasis on technology as a tool through use of graphing calculator/computer.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): EET-2120 Electronics I, and MATH-1510 Trigonometry, or MATH-151H Honors Trigonometry.

EET-2220 Electronics II
03 Semester Credits

Continuation of electronic circuits. Includes study of difference amplifier used in operational amplifiers. Additional topics include various uses of operational amplifier, voltage comparator, digital-to-analog converter (DAC), analog-to-digital converter (ADC), active filter circuits, oscillators and sample hold circuits.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2120 Electronics I.

EET-2231 Wired and Wireless Communications
03 Semester Credits

Final course in electronic communication series. Provides an in-depth study of fiber optic, microwave, broadband wired and cellular communication systems.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2131 Digital Communication Fundamentals

EET-2241 Microprocessor and Hardware Interfacing with C Programming
03 Semester Credits

Concluding course in the Digital/Microprocessors series. Focuses on application of microprocessor and related support chips, software and hardware interfacing with various input/output devices, and related software topics. Stresses control and measurement applications using the C programming language.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2140 Digital Circuits/Microprocessors II; or departmental approval.

EET-2290 Electrical Design Project
02 Semester Credits

Capstone course for Electrical-Electronic Engineering basic program. Designed to allow students opportunity to demonstrate and apply capabilities and skills acquired during previous engineering technology coursework. Students choose approved electronic project compatible with their interest and background. Project includes research, documentation, construction and testing, and concludes with a report and presentation of results.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): EET-2241 Microprocessor and Hardware Interfacing with C Programming; or departmental approval.

EET-2302 Cisco III Intermediate Routing and Switching 03 Semester Credits

Covers the architecture, components, and operations of routers and switches in a larger and more complex network. Includes how to configure routers and switches for advanced functionality. Configuration and troubleshooting routers and switches to resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Develop the knowledge and skills needed to implement DHCP and DNS operations in a network.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1312 Cisco II Basic Routing and Switching.

EET-2312 Cisco IV Basic WAN Technologies 03 Semester Credits

The WAN technologies and network services required by converged applications in a complex network.

Understanding the selection criteria of network devices and WAN technologies to meet network requirements. Configure and troubleshoot network devices and resolve common issues with data link protocols. Develop the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2302 Cisco III Intermediate Routing and Switching, or concurrent enrollment.

EET-2400 Biomedical Instrumentation I 03 Semester Credits

Introduction to biomedical program and to organization of hospital and/or health facilities. Study of anatomy and physiology as pertaining to safety checking, servicing and maintaining biomedical electronic equipment (such as ECG, EEG, electro-surgery units, defibrillators, infusion pumps, patient monitors, and other monitoring and diagnostic equipment). Hospital electrical safety and interaction with nursing staff and physicians continuously emphasized. Laboratory experiments on centrifuges, infusion pumps and electrosurgery units.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2120 Electronics I or concurrent enrollment.

EET-2410 Biomedical Instrumentation II 03 Semester Credits

Continuation of biomedical program. Study of general hospital equipment such as EKG machines, defibrillators, automated medtesters, patient monitors and ventilator. Emphasis on using various technical service manuals to repair these and other biomedical equipment. Safety checks performed on all biomedical equipment used in the laboratory.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2400 Biomedical Instrumentation I, and EET-2220 Electronics II or concurrent enrollment.

EET-2490 Biomedical Design Project 02 Semester Credits

Capstone course for Biomedical Engineering program. Designed to allow students to demonstrate and apply capabilities and skills acquired during their previous engineering technology coursework. Students choose approved biomedical project compatible with their interest and background. Project includes research, documentation, construction and testing, and concludes with a report and a presentation of the results.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): EET-2220 Electronics II or concurrent enrollment, and EET-2410 Biomedical Instrumentation II or concurrent enrollment.

EET-2500 Instrumentation and Control 03 Semester Credits

Concepts and practice in measurement and control of mechanical process variables in industry. Introduction to methods of instrumentation, characteristics of instruments, sensors, data acquisition and presentation, measurement and analysis of basic dimensions, force, motion, pressure, temperature, fluid flow and fluid viscosity.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): EET-1220 Circuits and Electronics, or EET-2120 Electronics I; or departmental approval.

EET-2520 Programmable Logic Controllers 03 Semester Credits

Introduction to programmable logic controller terminology, architecture, input/output modules and memory. Relay schematics and ladder logic diagrams and programming of programmable logic controllers are covered and reinforced in practical laboratory experiments. Sensing devices as limit switches, on/off electrical devices, temperature switches, timing and counting devices as well as event-driven and time-driven sequences are also included.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1220 Circuits and Electronics; or EET-1210 AC Electric Circuits and EET-1240 Digital Circuits/Microprocessors I; or departmental approval.

**EET-2591 Communications Design Project
02 Semester Credits**

Capstone course for the Digital Communications concentration in the Electronic Engineering Technology program. Designed to allow students to demonstrate and apply capabilities and skills acquired during previous engineering technology coursework. Students choose approved communications project compatible with their interest and background or can use a default project. Project includes research, documentation, construction and testing, and concludes with a report and an oral presentation of results.

Lecture 00 hour. Laboratory 04 hours.

Prerequisite(s): EET-1180 Surface Mount Soldering and EET-2140 Digital Circuits/Microprocessors II and EET-2220 Electronics II, or concurrent enrollment; and EET-2231 Wired and Wireless Communications, or concurrent enrollment

**EET-2710 Solar Power, Energy Storage and Conversion
03 Semester Credits**

Presents photovoltaic power (PEV) generation, sun farm steam turbine generation and related issues in a contemporary environment. Energy storage using various battery chemistries, Electrochemical (super) capacitors and feed-the-grid using rotary and solid state converters covered in detail. Pro and cons, as it effects the environment, of the total cost from manufacture to disposal discussed. Most lecture topics supported by laboratory experiments.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-2111 Industrial Electronics I and concurrent enrollment in EET-2120 Electronics I.

**EET-2830 Cooperative Field Experience
01-03 Semester Credits**

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

**EET-2901 Clinical Internship
03 Semester Credits**

Internship where student is expected to perform 360 hours of service at a local hospital or other biomedical facility. Student is expected to perform activities related to their biomedical technology field including but not limited to repair of biomedical equipment, safety inspections, and calibration.

Lecture 00 hours. Laboratory 00 hours.

Other Required hours: 360. Practicum 360 hours per semester/36 hours per week for 10 weeks.

Prerequisite(s): EET-2410 Biomedical Instrumentation II, and EET-2220 Electronics II.

**EET-2910 Directed Practice Electrical Utility
Technology III****04 Semester Credits**

Supervised practical applications of electrical overhead line worker job duties in a setting under personal supervision of electric company personnel. Emphasis on skills required to identify, install, and maintain primary underground residential distribution (URD) equipment, including various methods of troubleshooting URD primary and secondary circuits. Grounding distribution circuits will also be learned. Students will develop the knowledge and skill to safely perform rubber gloving assignments utilizing the insulate and isolate techniques, will perform various tasks while working on an energized three-phase circuit under controlled conditions. Safety topics include: fire extinguisher safety, temporary protective grounds, stored energy devices, and utilities protective service.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week on site (300 hours per semester).

Prerequisite(s): EET-1920 Directed Practice Electric Utility Technology II, and concurrent enrollment in ISET-2240 Applied National Electric Code.

**EET-2915 Directed Practice Substation Utility
Technology III****04 Semester Credits**

Third in a four part series providing the student with the advanced knowledge and skills necessary to safely work in a supervised capacity on energized equipment and in an unsupervised capacity on de-energized equipment employed in the production and distribution of electrical energy. This course also introduces the student to power transformer testing, troubleshooting, alarm systems, circuit breaker troubleshooting, reclosers and sectionalizers, OCB maintenance and voltage regulators.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week on site (300 hours per semester).

Prerequisite(s): EET-1925 Directed Practice Substation Utility Technology II, and concurrent enrollment in ISET-2240 Applied National Electric Code.

EET-2920 Directed Practice Electrical Utility Technology IV

04 Semester Credits

Supervised practical applications of skills required to safely climb transmission support towers and H structures to achieve qualified status. Emphasis on intermediate tasks while aloft pertinent structures. Also develops students understanding of substation equipment and one-line drawings; recognizing energized equipment, minimum approach distances, and substation safety; lock-out-tagout procedures; and powered industrial vehicle certifications.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week on site (300 hours per semester).

Prerequisite(s): EET-2910 Directed Practice Electrical Utility Technology III; and concurrent enrollment in ISET- 2200 Industrial Motor Controls.

EET-2925 Directed Practice Substation Utility Technology IV

04 Semester Credits

Fourth in a four part series providing the student with the knowledge and skills to work safely and competently in a supervised or unsupervised capacity. The fourth series is the culmination of prior courses with the introduction of advanced knowledge and skills related to Motor Operates Air Brake Switch, electronic recloser controls, SF6 gas breakers, ACB maintenance, OCB timing and travel tests, calibration of various substation equipment, PT testing, phasing, switching procedures and the performance of energized primary work.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 20 hours per week on site (300 hours per semester).

Prerequisite(s): EET-2910 Directed Practice Electrical Utility Technology III.

ELECTRONEURODIAGNOSTIC TECHNOLOGY- END

END-1300 Introduction to Electroneurodiagnostic Technology

02 Semester Credits

Introduction and orientation to health careers in field of electroneurodiagnostic including specific duties, certifications and licensure requirements, work setting and conditions, and career ladder opportunities. Overview of standards of practice of clinical neurophysiology with emphasis on neuroscience technique, instrumentation, terminology of electroneurodiagnostic practices and recording/monitoring techniques utilized in determination of treatment plans for neurological disorders.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

END-1310 Cardiopulmonary Physiology of Sleep

03 Semester Credits

Physiology of cardiovascular and pulmonary systems with emphasis on electrophysiology of the heart, electrocardiography interpretation, blood flow characteristics and hemodynamics. Pulmonary system emphasis on lung volumes, dynamics of ventilation, pulmonary function tests, diffusion, gas transport, oxygenation studies and control of ventilation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I; and admission to the program.

END-1350 Introduction to Electroencephalography (EEG)

03 Semester Credits

Provides basic knowledge of electroencephalography, understanding EEG concepts utilized for diagnosis of various cerebral disorders. Includes history, development, basic neurophysiology concepts of EEG, normal and abnormal brain wave patterns in adults and children, with emphasis on instrumentation and recording techniques.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I or concurrent enrollment; or BIO-233A or concurrent enrollment, and BIO-233B or concurrent enrollment; and concurrent enrollment in END-1300 Introduction to Electroneurodiagnostic Technology, and departmental approval: admission to program.

END-1410 Beginning Polysomnography

02 Semester Credits

Overview of the field of Polysomnography including job responsibilities, credentialing, medical ethics and patient confidentiality. Normal and abnormal sleep disorders, integrating the physiologic functions of the nervous, respiratory and cardiovascular systems. Emphasis on basic sleep sciences, physiology, monitoring, electrical safety, diagnosis and treatment of sleep disorders.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I, and admission to the program.

END-1421 Intermediate Polysomnography I

02 Semester Credits

Basic discussion of recording sleep apnea montage. Emphasis on equipment, principle of operation, associated activity related to normal and abnormal stages of sleep, and placement and calibration of the following: electroencephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO2), inductive plethysmography and airflow thermocouple. To fulfill program laboratory requirements, students should enroll in the related laboratory course.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): END-1410 Beginning Polysomnography, and END-1310 Cardiopulmonary Physiology of Sleep, and concurrent enrollment in END-142L Intermediate Polysomnography-I Lab.

END-142L Intermediate Polysomnography-I Lab
01 Semester Credit

Laboratory course examines the recording of sleep apnea montage. Includes equipment, and principle of operation. Placement and calibration of the following: electroencephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO₂), inductive plethysmography and airflow thermocouple. Designed to illustrate concepts covered in END-1421.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): END-1410 Beginning Polysomnography, and concurrent enrollment in END-1421 Intermediate Polysomnography I.

END-1430 Intermediate Polysomnography-II
03 Semester Credits

Presentation and discussion of cognitive and psychomotor practices related to interpretation of the polysomnogram for adult and pediatric patients. Emphasis on continuous positive airway pressure (CPAP) and bilevel positive airway pressures (BiPAP) equipment, artifact and troubleshooting of sleep montage results. Includes digital data acquisition, parasomnias, scoring, MSLTs, MWTs and nocturnal penile tumescence.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): END-1421 Intermediate Polysomnography I, and END-142L Intermediate Polysomnography-I Lab, and END-1934 Polysomnography Directed Practice-I.

END-1440 Neurophysiology of Sleep
02 Semester Credits

Basic discussion of the neurophysiology of sleep and role of the autonomic nervous system. Emphasis on respiratory and cardiovascular effects, regulation of sleep, circadian rhythms, and maturation of the sleep stages addressing neonates to adults.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

END-1450 Intermediate Electroencephalography (EEG)
03 Semester Credits

Discussion of clinical significance of epileptiform patterns, pharmacological effects on EEG recordings; EEG correlation of infection; and vascular and structural disease. Presentation and discussion of criteria for specialized recording techniques used in prolonged EEG recordings, specialized areas of the hospital, such as intensive care and operating room. Discussion of EEG signal analysis.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): END-1350 Introduction to Electroencephalography (EEG), or departmental approval.

END-1500 Basic Evoked Potentials
03 Semester Credits

Basic discussion of evoked potential recording techniques. Emphasis on equipment, principles of operation, associated waves related to normal and abnormal

waveforms, placement and calibration, obtaining clearly resolved and replicated obligated waveforms of brainstem auditory, visual, and somatosensory evoked potentials in adults and pediatric subjects.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG) or concurrent enrollment, or departmental approval.

END-1910 END Directed Practice I
04 Semester Credits

Clinical electroencephalography experience in a selected neurodiagnostic lab or an affiliated health care facility under the direct supervision of an EEG technologist or physician. Emphasis on EEG concepts. Performance of EEG testing on clinical patients, medical record keeping and clinical history taking.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Directed Practice: 15 hours per week.

Prerequisite(s): END-1350 Introduction to Electroencephalography (EEG), and concurrent enrollment in END-1450 Intermediate Electroencephalography (EEG); or departmental approval.

END-1934 Polysomnography Directed Practice-I
03 Semester Credits

Directed practice in the clinical setting in sleep laboratory or a sleep center. Departmental orientation, policies and procedures, individual body mechanics and patient transfer techniques. Emphasis in overseeing periodic cessation of respiratory activity based on placement and monitoring of the following: electroencephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO₂), inductive plethysmography and airflow thermocouple.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 18 hours per week.

Prerequisite(s): END-1410 Beginning Polysomnography, END-1310 Cardiopulmonary Physiology of Sleep, concurrent enrollment in END-1421 Intermediate Polysomnography-I, and END-142L Intermediate Polysomnography Lab-I.

END-2300 Nerve Conduction Studies
03 Semester Credits

Basic discussion of nerve conduction studies and electromyography. Emphasis on equipment, knowledge of placement stimulation sites, sources of error in nerve conduction studies, electronics, pathology (abnormal nerve conduction studies, anatomy as it pertains to entrapment sites and nerve conduction studies), waveforms identification and case presentation.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG), and concurrent enrollment in END-2910 END Directed Practice II; or departmental approval.

END-2320 Intermediate Nerve Conduction Studies 03 Semester Credits

Advanced discussion of nerve conduction studies and electromyography. Emphasis on less routine nerve conduction studies (NCS), anomalous innervations, equipment, knowledge, placement stimulation sites, sources of error in nerve conduction studies, electronics, pathology, waveforms identification and case presentation
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): END-2300 Nerve Conduction Studies.

END-2350 Fundamentals of Polysomnography 04 Semester Credits

Overview of field of Polysomnography including job responsibilities and credentialing. Normal and abnormal sleep disorders, integrating the physiologic functions of nervous, respiratory, and cardiovascular systems. Discussion of recording sleep apnea montage, placement and calibration of diagnostic, electrodes, and associated equipment. Emphasis on monitoring, diagnosis, scoring, and treatment of sleep disorders. Continuous Positive Airway Pressure (CPAP) and Bilevel Positive Airway Pressures equipment, artifact and troubleshooting of sleep montage results.
Lecture 03 hours. Laboratory 02 hours.
Prerequisite(s): END-2411 Neurophysiology of Electroencephalography/Sleep Disorders, or departmental approval.

END-2400 Intraoperative Monitoring for Electroneurodiagnostic Technologists 02 Semester Credits

Discussion of intraoperative monitoring of CNS (brain, brainstem, spinal cord) function during surgical procedures. Types of recordings, technologist's role, recording parameters, reasons for surgical monitoring, variables affecting monitoring, and outcome of the surgery.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG); or END-2910 END Directed Practice II, or concurrent enrollment and END-1500 Basic Evoked Potentials, or departmental approval.

END-2411 Neurophysiology of Electroencephalography/Sleep Disorders 03 Semester Credits

Analysis of the central and peripheral nervous systems, electrophysiology, and nerve conducting velocities in health and disease. Includes discussion of neurophysiology of sleep and the role of the autonomic nervous system. Emphasis on respiratory and cardiovascular effects, regulation of sleep, circadian rhythms and maturation of the sleep stages addressing neonates to adults.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): BIO-2341 Anatomy and Physiology II, and END-1450 Intermediate Electroencephalography (EEG), or departmental approval.

END-2450 Neonatal/Pediatric Electroneurodiagnostic 03 Semester Credits

Discussion of recording neonatal and pediatric EEG and polysomnograms. Development of sleep-wake cycle, monitoring the EEG in neonatal and pediatric populations, and differential diagnosis based on polysomnographic variables.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): END-1450 Intermediate Electroencephalography (EEG); or departmental approval.

END-2911 END Directed Practice II 02 Semester Credits

Continuation of directed practice in clinical setting at neurology laboratory or neurodiagnostics department. Departmental orientation, policies and procedures, assist patient setup, performance and discontinuance of neurodiagnostic activities performed at the assigned clinical site.
Lecture 01 hour. Laboratory 00 hours.
Other Required Hours: Directed practice: 8 hours per week for 10 weeks (80 hours total).
Prerequisite(s): END-1500 Basic Evoked Potentials; and END-1910 END Directed Practice I; or departmental approval.

END-2920 END Directed Practice III 04 Semester Credits

Directed practice in clinical setting at neurology laboratory or neurodiagnostics department. Departmental orientation, policies and procedures, assist patient setup and discontinuance in monitoring of electromyography (EMG) activities. Experience with nerve conduction studies, and continuation of performance of EEG testing.
Lecture 01 hour. Laboratory 00 hours.
Other Required Hours: Directed Practice: 15 hours per week.
Prerequisite(s): END-2300 Nerve Conduction Studies; or departmental approval.

END-2930 END Directed Practice IV 02 Semester Credits

Clinical electroencephalography experience in a selected neurodiagnostic lab in health care facility under direct supervision of an EEG technologist or physician office. Emphasis on EEG testing in neonates, infants and children, medical record keeping and clinical history taking.
Lecture 01 hour. Laboratory 00 hours.
Other Required Hours: Directed Practice: 75 hours per semester.
Prerequisite(s): END-2450 Neonatal/Pediatric Electroneurodiagnostic, or departmental approval.

END-2934 Polysomnography Directed Practice-II
03 Semester Credits

Directed practice in the clinical setting in sleep laboratory or a sleep center. Departmental orientation, policies and procedures. Assist adult and pediatric patient setup and discontinuance in monitoring electroencephalography (EEG), electro-oculography (EOG), electrocardiography (ECG), electromyography (EMG), pulse oximetry (SpO₂), inductive plethysmography and airflow thermocouple. Emphasis on scoring a sleep montage related to respiratory cessation.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 18 hours/week in a sleep center

Prerequisite(s): END-1421 Intermediate Polysomnography I, and END-142L-Intermediate Polysomnography-I Laboratory, and END-1934 Directed Practice-I, and concurrent enrollment in END-1430 Intermediate Polysomnography-II.

END-2990 Electroneurodiagnostic Capstone
01 Semester Credit

Capstone course in Electroneurodiagnostic Technology. Assessment of one's knowledge, experience and skills as electroneurodiagnostic technologist. Preparation and presentation of qualifications through written resume and portfolio. Guidelines and preparation for employment interview. Investigation into electroneurodiagnostic issues.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): END-2920 END Directed Practice III, or departmental approval.

EMERGENCY MEDICAL TECHNOLOGY - EMT

EMT-1302 Emergency Medical Technician - Basic
06 Semester Credits

Comprehensive study of basic life support skills of Emergency Medical Technician-Basic based on the U.S. Department of Transportation National Standard EMT-Basic Curriculum and the National EMS Education Standards, January 2009 or later; and the State of Ohio Emergency Medical Service EMT-Basic curriculum, most current version. Includes recognition of nature and seriousness of patient's condition or extent of injuries; and assessing requirements of emergency care, lifting, moving, handling and transporting patients as part of pre-hospital emergency care system. Successful completion of American Heart Association Basic Life Support for the Healthcare Provider Course component of course required to successfully complete EMT-1302. Successful completion

of EMT-1302 and EMT-130L required for NREMT and State of Ohio EMT-Basic certification.

Lecture 05 hours. Laboratory 02 hours.

Prerequisite(s): Eligibility for ENG-0990 Language Fundamentals II and eligibility for MATH-0950 Beginning Algebra I; and departmental approval: admission to the program.

EMT-130L EMT Basic Practical Lab
01 Semester Credits

This course provides the simulation labs and directed practice to complete the requirements for National Registry of EMTs (NREMT) EMT-Basic certification. This is the primary requirement for State of Ohio EMT Basic Certification.

Lecture 00 hours. Laboratory 02 hours.

Other Required Hours: 37 hours of directed practice performed in program approved external sites.

Prerequisite(s): EMT-1302 Emergency Medical Technician - Basic, or concurrent enrollment.

EMT-1310 Cardiopulmonary Resuscitation
01 Semester Credit

[This course is cross-listed as HLTH-1310. Credit can only be earned once for either course.] The CPR for Healthcare Providers teaches the management of respiratory and circulatory emergencies in adults, children, and infants. The Heartsaver First Aid teaches the management of illness and injury in the first few minutes until professional help arrives. Instruction and treatment methods to meet American Heart Association (AHA) or American Red Cross (ARC) standards for CPR.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

EMT-1320 Heavy Rescue
02 Semester Credits

Techniques of heavy rescue, safe management of equipment used in heavy rescue, entrapment and patient extrication.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Departmental approval: certified EMT-B; emergency workers must be in good health or have physician's verification; must be able to lift 75 pounds.

EMT-1330 Defensive Driving - EMT
01 Semester Credit

Principles and practices of defensive driving related to emergency rescue vehicles including laws, conditions of accidents and methods of avoiding accidents.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval: admission to program, or certified EMT-B, or working with safety forces; must have valid Ohio driver's license.

EMT-1400 Paramedic Success

04 Semester Credits

Designed to prepare students to pursue paramedic certification. Provides foundation for medical terminology and human biology with a focus on relevant anatomical systems for the emergency medical technician (EMT). Emphasis on the basics of word building, defining, spelling, reading practice, and pronunciation. Basic structure and function of body systems and diseases of these systems studied.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): None.

EMT-2330 Paramedic Theory I

06 Semester Credits

Principles and practices of paramedic based on the Department of Transportation National EMS scope of practice model and education standards, current to at least 2011, and the State of Ohio Paramedic Curriculum effective 2012. Includes roles and responsibilities, Emergency Medical Services systems, well-being of the paramedic, therapeutic communications, medical/legal considerations, stress management and life span development.

Lecture 04 hours. Laboratory 04 hours.

Prerequisite(s): EMT-1400 Paramedic Success; or BIO-2331 Anatomy and Physiology I, and BIO-2341 Anatomy and Physiology II, and State of Ohio EMT-Basic certification required.

EMT-2340 Paramedic Theory II

06 Semester Credits

Principles and practices of paramedic based on the Department of Transportation National EMS scope of practice model and education standards, current to at least 2011, and the State of Ohio Paramedic Curriculum effective 2012. Includes airway management, physical examination, trauma systems with mechanism of injury, hemorrhage and shock, trauma assessment and management related to: soft tissue, musculoskeletal, head, face, spinal, thoracic and abdominal injuries including burns.

Lecture 04 hours. Laboratory 03 hours.

Other Required Hours: Directed Practice: 112 hours per semester.

Prerequisite(s): EMT-2350 Paramedic Theory III and departmental approval: current Ohio EMT-B certification.

EMT-2350 Paramedic Theory III

06 Semester Credits

Principles and practices of paramedic based on the Department of Transportation National EMS scope of practice model and education standards, current to at least 2011, and the State of Ohio Paramedic Curriculum effective 2012. Includes anatomy and physiology of the pulmonary system, assessment and treatment of pulmonary emergencies, anatomy and physiology of cardiovascular system, assessment of cardiac and stroke

patient, EKG interpretation, cardiac and stroke treatment modalities, cardiac treatment pharmacology, defibrillation, and advanced cardiac life support.

Lecture 04 hours. Laboratory 03 hours.

Other Required Hours: Directed Practice: 112 hours per semester.

Prerequisite(s): EMT-2330 Paramedic Theory I and departmental approval: current Ohio EMT-B Certification.

EMT-2360 Paramedic Theory IV

06 Semester Credits

Principles and practices of paramedic based on the Department of Transportation National EMS scope of practice model and education standards, current to at least 2011, and the State of Ohio Paramedic Curriculum effective 2012. Includes management of endocrine, GI, renal/urological, toxicology, hematology, infectious, environmental and behavioral emergencies. Management of special needs patients, including geriatric, pediatric, and neonatal medical emergencies age groups. Detailed assessment and treatment of the OB/GYN patient and emergency field delivery procedures. Basic orientation in the study of ambulance operations, hazardous materials, rescue awareness and crime scene awareness.

Lecture 04 hours. Laboratory 03 hours.

Other Required Hours: Directed Practice: 112 hours per semester.

Prerequisite(s): EMT-2350 Paramedic Theory III, and current Ohio EMT-Basic certification.

EMT-2370 Paramedic Theory V

05 Semester Credits

Final course in sequence necessary for NREMT Paramedic Certification and State of Ohio Paramedic certification. Students will integrate knowledge and skills learned in previous courses in order to demonstrate competence in American Heart Association Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS); and American College of Surgeons or American College of Emergency Physicians approved trauma life support and National Association of EMT (NAEMT) medical life support standards. In the directed practice and field experience environment, they will demonstrate team leadership and integration with medical professionals.

Lecture 03 hours. Laboratory 03 hours.

Other Required Hours: Directed practice and field experience: 112 hours per semester.

Prerequisite(s): EMT-2360 Paramedic Theory IV, and departmental approval: State of Ohio Certified EMT-Basic.

EMT-2400 Advanced Cardiac Life Support
01 Semester Credit

Advanced cardiac life support (ACLS) emphasizes the importance of basic life support cardiopulmonary resuscitation (CPR) to patient survival, the integration of effective basic life support with advanced cardiovascular life support interventions, and the importance of effective team interaction and communication during resuscitation. Students engage in simulated clinical scenarios that encourage active, hands-on participation through learning stations where students will practice essential skills individually, as part of a team, and as team leader.
Lecture 01 hour. Laboratory 00 hours.
Prerequisite(s): Departmental approval: valid current American Heart Healthcare Provider CPR certification required.

ENGLISH - ENG

ENG-0800 Developmental Special Topics in English
01-03 Semester Credits

Study of selected developmental topics or current issues in English. Provides student an opportunity to explore various topics in greater detail (see current semester Credit Schedule for offerings). Repeatable for different topics. May not be applied toward elective and/or program graduation degree requirements.
Lecture 01- 03 hours. Laboratory 00 hours.
Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

ENG-0900 Transition to College English
01 Semester Credits

Intensive practice in writing for the purpose of preparing students for college-level English. Successful completion permits a student to enroll in ENG 1010.
Lecture 01 hour. Laboratory 00 hours.
Prerequisite(s): Appropriate placement test score or departmental approval.

ENG-0960 Reading Improvement
03 Semester Credits

Designed for those students who need to improve basic comprehension. Emphasis in literal, inferential, and critical comprehension and vocabulary development.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): Appropriate placement test score; or departmental approval.

ENG-0980 Language Fundamentals I
06 Semester Credits

Emphasis on mastery of language fundamentals.
Lecture 06 hours. Laboratory 00 hours.
Prerequisite(s): ENG-0960 Reading Improvement or appropriate placement test score; or departmental approval.

ENG-0990 Language Fundamentals II
06 Semester Credits

Emphasis on basic essay writing skills, reading, study and test-taking skills.
Lecture 06 hours. Laboratory 00 hours.
Prerequisite(s): ENG-0980 Language Fundamentals I, or placement by department.

ENG-1000 Using Grammar Effectively
03 Semester Credits

Development of clear, effective English sentences by studying form and function of words, phrases, and clauses. Note: Class is not intended for transfer.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): Eligibility for ENG-0990 Language Fundamentals II, or departmental approval.

ENG-1010 College Composition I
03 Semester Credits

Study and practice in academic writing; reading and interpretation of selected texts. Course may be thematically organized.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): Appropriate placement test score; or ENG-0900 Transition to College English; or ENG-0990 Language Fundamentals II; or ESL-1310 English as a Second Language: Grammar for Communication III, and ESL-1320 English as a Second Language: Reading and Writing III, and ESL-1330 Speaking English as a Second Language III; or departmental approval.
 OAN Approved: TMM001

ENG-101H Honors College Composition I
03 Semester Credits

Study and practice in academic writing; reading and interpretation of selected texts. Requires intensive critical/analytical thinking, writing and speaking. Course may be thematically organized. Note: Course meets ENG 1010 graduation requirements.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): Appropriate placement test score, or departmental approval.

ENG-1020 College Composition II
03 Semester Credits

Study and practice of persuasive and argumentative writing with emphasis on analysis and research; reading and interpretation of selected texts. Course may be thematically organized.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.
 OAN Approved: TME002

ENG-102H Honors College Composition II**03 Semester Credits**

Study and practice of persuasive and argumentative writing with emphasis on analysis and research; reading and interpretation of selected texts. Requires intensive critical/analytical thinking, writing and speaking. Course may be thematically organized. Note: Course meets ENG 1020 graduation requirements.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-101H Honors College Composition I; or ENG-1010 College Composition I and departmental placement.

ENG-1070 Advanced Reading Improvement**03 Semester Credits**

Instruction in art and skills of efficient reading with emphasis on understanding and critical analysis of college-level material. Strategies to increase comprehension, promote vocabulary development, and improve ability to study and retain text-related information. Application to professional and business-related reading when adaptable.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I, or placement by department.

ENG-179H Honors Contract in English**01 Semester Credit**

Honors Contract complements and exceeds requirements and objectives for an existing ENG 1000-level course through formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of six credits of different topics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level honors course in English, whose instructor approves the Honors Contract.

ENG-2010 Creative Writing**03 Semester Credits**

Practice in imaginative writing, exploration of creative potential. Emphasis on sources of creativity and forms of expression in selected literary genres.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2020 Women Writers on the Experiences of Women**03 Semester Credits**

An introduction to women's literature through the study of classic and contemporary readings. Involves analysis of theme, character, plot, setting, dramatic conflict, and writing style. Provides an opportunity to study literature

by women authors that are not traditionally covered in most American and British literature survey courses.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II.

ENG-2040 Poetry Workshop**03 Semester Credits**

Practice in imaginative writing, exploration of creative potential. Emphasis on sources of creativity and forms of expression in poetry and its subgenres.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II.

ENG-2050 Introduction to Personal and Reflective Writing**03 Semester Credits**

[This course is cross-listed as WST-2050. Credit may be earned once for either course.] The examination of personal, narrative, and self reflective writing from journals, memoirs, letters, essays, poetry, blogs, autobiographies, biographies and other nonfiction works through discussion, and various formal and informal writing assignments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I.

ENG-2151 Technical Writing**03 Semester Credits**

The role of writer and audience in the technical communication process; emphasis on the actual writing and evaluation of technical, business, and online documents; includes layout, design principles, and ethical issues as well as writing for diverse audiences. Requires individual and group writing projects and presentations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, or departmental approval.

ENG-2310 American Literature I**03 Semester Credits**

Study of significant works of American prose and poetry from the pre-Columbian period through 1865.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

OAN Approved: OAH033

ENG-2320 American Literature II**03 Semester Credits**

Study of major works of American prose, poetry, and drama from 1865 to the present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2350 British Literature I**03 Semester Credits**

Survey of major works of British prose, poetry, and drama from early period to 1785.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

OAN Approved: OAH0353

ENG-2360 British Literature II**03 Semester Credits**

Survey of major works of British prose, poetry, and drama from 1785 to the present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

OAN Approved: OAH054

ENG-2410 Introduction to Literature: Poetry**03 Semester Credits**

Critical analysis of selected works of poetry, designed to develop understanding and appreciation of poem and dramatic text as literary form.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2420 Introduction to Literature: Fiction**03 Semester Credits**

Critical analysis of selected works of fiction, designed to develop understanding and appreciation of short story and novel as literary forms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2430 Introduction to Literature: Drama**03 Semester Credits**

Reading, discussion, interpretation, and critical analysis of a variety of dramatic works. Designed to develop understanding and appreciation of drama as a literary form.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2450 Introduction to Literature: Science Fiction**03 Semester Credits**

Historical roots, literary forms, major works, and subgenres of science fiction literature.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II.

ENG-2510 African-American Literature I**03 Semester Credits**

Study of major works of African-Americans from the colonial period to 1950.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2520 African-American Literature II**03 Semester Credits**

Study of major works of African-Americans from 1950 to the present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2601 Literature for Children and Adolescents**03 Semester Credits**

Reading, discussion, interpretation, and written analysis of a wide variety of literary works written for children and adolescents.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2700 World Literature**03 Semester Credits**

Study of World's major authors, themes, and literary movements from earliest literature to modern literature. Emphasis on writers from the non-Western world. Some works of Western authors are used for comparative purposes and to demonstrate interconnectedness of world's various cultures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

OAN Approved: OAH034

ENG-2710 Shakespeare**03 Semester Credits**

Critical analysis of selected works of Shakespeare.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2720 Survey of Biblical Literature

03 Semester Credits

Critical analysis of selected books of the Bible with emphasis on those works that have been particularly influential in Western literary tradition.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II, or departmental approval.

ENG-2730 Exploration of World Mythology

03 Semester Credits

Develops skills for the in-depth exploration of literature. Focuses on reading and interpreting myths from around the world and throughout history, practicing various analytical approaches essential to building interpretive arguments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors Composition II, or departmental approval.

ENG-2740 Literature and Film

03 Semester Credits

Introduces literary works and film adaptations. Literal, faithful, and loose adaptations of literary works discussed. Includes how a work of literature is adapted into a film and examples of adaptation of a novels, short stories, plays, and others.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

ENG-2760 Detective Fiction: Mystery, Murder, and Malice

03 Semester Credits

Study of detective fiction as a genre from the nineteenth century to the present day.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II or departmental approval.

ENGLISH AS A SECOND LANGUAGE - ESL

ESL-1020 English as a Second Language: Basic Reading and Writing

06 Semester Credits

English for non-native speakers. Practice in reading beginning material. Practice in writing sentences, short answers, controlled compositions, and responses to picture stories.

Lecture 05 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1030 English as a Second Language: Basic Grammar for Communication, or concurrent enrollment; and placement by ESL assessment exam.

ESL-1030 English as a Second Language: Basic Grammar for Communication

06 Semester Credits

English for non-native speakers. Understanding of basic grammatical forms and functions of American English and practice in producing them. Focus on form, meaning and use in oral communication.

Lecture 05 hours. Laboratory 02 hours.

Prerequisite(s): Placement by ESL assessment exam.

ESL-1110 English as a Second Language: Grammar for Communication I

04 Semester Credits

English for non-native speakers. Understanding of basic grammar structures of American English and practice in producing them. Focus on form, meaning, and use in oral and written communication.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1030 English as a Second Language: Basic Grammar for Communication, and ESL-1020 English as a Second Language: Basic Reading and Writing; or placement by ESL assessment exam.

ESL-1121 English as a Second Language: Reading and Writing I

04 Semester Credits

English for non-native speakers. Practice in reading high-beginning texts. Practice in writing narratives and personal expression paragraphs using basic sentence patterns and correct spelling and punctuation.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1030 English as a Second Language: Basic Grammar for Communication, and ESL-1020 English as a Second Language: Basic Reading and Writing, or placement by ESL assessment exam; and ESL-1110 English as a Second Language: Grammar for Communication I, or concurrent enrollment.

ESL-1131 English As A Second Language: Speaking and Listening I

04 Semester Credits

High-beginning level communication for non-native speakers. Practice communicating by speaking and listening to American English. Develop competence and confidence in listening comprehension and conversational skills within supportive structured situations. Recognize and produce sounds, rhythm and intonation patterns at a high beginning level.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1020 English as a Second Language: Basic Reading and Writing, and ESL-1030 English as a Second Language: Basic Grammar for Communication; or Placement by ESL assessment exam; and ESL-1110 English as a Second Language: Grammar for Communication I, or concurrent enrollment.

ESL-1210 English as a Second Language: Grammar for Communication II**04 Semester Credits**

English for non-native speakers. Understanding of intermediate grammar, structures of American English and practice in producing them. Focus on form, meaning, and use in oral and written communication.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1110 English as a Second Language: Grammar for Communication I, and ESL-1121 English as a Second Language: Reading and Writing I, and ESL-1131 English as a Second Language: Speaking and Listening I; or placement by ESL assessment exam.

ESL-1221 English as a Second Language: Reading and Writing II**04 Semester Credits**

English for non-native speakers. Practice in reading intermediate texts. Practice in writing personal essays and responses to readings, using intermediate sentence patterns and correct spelling and punctuation.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1131 English as a Second Language: Speaking and Listening I, and ESL-1110 English as a Second Language: Grammar for Communication I, and ESL-1121 English as a Second Language: Reading and Writing I; or placement by ESL assessment exam; and ESL-1210 English as a Second Language: Grammar for Communication II, or concurrent enrollment.

ESL-1231 English as a Second Language: Speaking and Listening II**04 Semester Credits**

Intermediate communication for non-native speakers. Practice communicating by speaking and listening to American English. Develop competence and confidence in listening comprehension, intermediate note-taking, and conversational skills within supportive, structured and non-structured situations. Recognize and produce sounds, rhythm, stress, and intonation patterns at an intermediate level.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1110 English as a Second Language: Grammar for Communication I, and ESL-1121 English as a Second Language: Reading and Writing I, and ESL-1131 English as a Second Language: Speaking and Listening I; or placement by ESL assessment exam; and ESL-1210 English as a Second Language: Grammar for Communication II, or concurrent enrollment.

ESL-1240 Accent Reduction for Non-Native Speakers**03 Semester Credits**

Intermediate and higher level pronunciation for non-native speakers of English. Improve intelligibility and comprehensibility through reducing or eliminating the features of the student's native language pronunciation which interfere with effective communication. Develop confidence and effectiveness in speaking and pronouncing American English. Emphasis placed on the most

distinguishing features of American English, such as rhythm, stress, and intonation, in order to convey emphasis and coherence. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1121 English as a Second Language: Reading and Writing I, and ESL-1131 English as a Second Language: Speaking and Listening I, ESL-1110 English as a Second Language: Grammar for Communication I or placement test.

ESL-1250 Introduction to American Culture**03 Semester Credits**

Designed for non-native speakers of English placed in level 2 or higher in the ESL program to develop understanding and increase awareness of the culture of the United States. Focuses on traditional mainstream values, how they developed, and how they influence American life today. Attendance to cultural events and other field trips required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ESL-1121 English as a Second Language: Reading and Writing I, and ESL-1131 English as a Second Language: Speaking and Listening I, and ESL-1110 English as a Second Language: Grammar for Communication I.

ESL-1310 English as a Second Language: Grammar for Communication III**04 Semester Credits**

English for non-native speakers. Understanding of advanced grammar structures of American English and practice in producing them. Focus on form, meaning, and use in oral and written communication.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1210 English as a Second Language: Grammar for Communication II, and ESL-1221 English as a Second Language: Reading and Writing II, and ESL-1231 English as a Second Language: Speaking and Listening II; or placement by ESL assessment exam.

ESL-1321 English as a Second Language: Reading and Writing III**04 Semester Credits**

English for non-native speakers. Practice in reading advanced texts and literary material. Practice in writing interpretive essays and personal responses to readings, using advanced sentence patterns and correct spelling and punctuation.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1210 English as a Second Language: Grammar for Communication II, and ESL-1221 English as a Second Language: Reading and Writing II, and ESL-1231 English as a Second Language: Speaking and Listening II; or placement by ESL assessment exam; and ESL-1310 English as a Second Language: Grammar for Communication III, or concurrent enrollment.

ESL-1331 English as a Second Language: Speaking and Listening III

04 Semester Credits

High-intermediate communication for non-native speakers. Develop critical listening and speaking skills and strategies, and improve pronunciation for academic, professional, and social settings. Develop notetaking skills and strategies for academic purposes.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1210 English as a Second Language: Grammar for Communication II, and ESL-1220 English as a Second Language: Reading and Writing II, and ESL-1230 Speaking English as a Second Language II; or placement by ESL assessment exam; and ESL-1310 English as a Second Language: Grammar for Communication III or concurrent enrollment.

ESL-1350 ESL/ESOL Spoken English through Idioms and Phrasal Verbs

03 Semester Credits

This course will familiarize the ESL/ESOL speaker with the informal spoken American English idioms and phrasal verbs.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ESL-1110 English as a Second Language: Grammar for Communication I, and ESL-1121 English as a Second Language: Reading and Writing I, and ESL-1131 English as a Second Language: Speaking and Listening I; or departmental approval.

ESL-1410 English as a Second Language Grammar for Communication IV

04 Semester Credits

English for non-native speakers. Mastering of advanced grammar structures of American English and practice in producing them. Focus on form, meaning and use in oral and written communication.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1310 English as a Second Language: Grammar for Communication III, and ESL-1320 English as a Second Language: Reading and Writing III, and ESL-1330 Speaking English as a Second Language III, or placement by ESL assessment exam.

ESL-1420 Intensive English Program Writing IV

06 Semester Credits

English for non-native speakers. Designed for students about to begin a graduate or professional degree program or an undergraduate program at the upperclassman level. Practice in the skills needed for analytical writing as well as research writing, including formulating the research question, and finding, evaluating, incorporating, and citing sources. Research practices for a wide variety of academic disciplines covered.

Lecture 06 hours. Laboratory 00 hours.

Prerequisite(s): ESL-1310 English as a Second Language: Grammar for Communication III, ESL-1320 English as a Second Language: Reading and Writing III, and ESL-1330 Speaking English as a Second Language III, or placement by ESL placement Exam.

ESL-1440 Intensive English Program Reading for Speakers of Other Languages

04 Semester Credits

This course for non-native speakers strengthens reading skills in preparation for academic coursework in upper division courses at a four year college or university or in a graduate program.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ESL-1310 English as a Second Language: Grammar for Communication III, and ESL-1320 English as a Second Language: Reading and Writing III, and ESL-1320 English as a Second Language: Reading and Writing III; and ESL-1410 English as a Second Language Grammar for Communication IV or concurrent enrollment; and ESL-1420 Intensive English Program Writing IV or concurrent enrollment; or departmental approval.

ESL-144L Intensive Reading Lab

03 Semester Credits

Intensive reading lab for non-native speakers. Emphasis on developing and practicing reading skills and strategies necessary for building confidence and academic success including increasing speed, vocabulary building, developing and practicing comprehension skills in reading academic texts and extensive reading (reading for pleasure).

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): ESL-1320 English as a Second Language: Reading and Writing III.

ESL-1460 ESL/ESOL for Special Purposes - Medicine

02 Semester Credits

Course for English as a Second Language (ESL)/English for Speakers of Other Languages (ESOL) students entering medical fields to strengthen language skills and introduce students to American healthcare situations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ESL-1330 Speaking English as a Second Language III.

ESL-1480 TOEFL Preparation

03 Semester Credits

English for non-native speakers. Practice in reading advanced texts and literary material in preparation for the Test of English as a Foreign Language (TOEFL). Practice writing essays, using advanced sentence patterns and punctuation. Practice listening to conversations and to lectures and synthesizing information from oral and written passages into organized essays. Practice speaking and formulating extended oral responses to questions.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ESL-1310 English as a Second Language: Grammar for Communication III or concurrent enrollment; and ESL-1320 English as a Second Language: Reading and Writing III or concurrent enrollment; and ESL-1330 Speaking English as a Second Language III or concurrent enrollment; or departmental approval.

ENVIRONMENTAL HEALTH AND SAFETY TECHNOLOGY - EHST**EHST-1301 Introduction to Environmental Technology**
03 Semester Credits

Comprehensive overview of topics relating to the environmental technology field. Concentration on developing awareness of the many facets of science, technology and public policy that are involved in environmental management.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

EHST-1310 Introduction to Environmental Law
04 Semester Credits

Study of U.S. Environmental Protection Agency (EPA) laws and regulations which protect our environment and health. Students learn steps in managing hazardous wastes including production, treatment, transportation, and disposal of hazardous materials. Involves reading, interpreting, and summarizing sections from the Code of Federal Regulations and The United States Code. Coverage includes: National Environmental Policy Act; Occupational Safety and Health Act; Clean Air Act; Clean Water Act; Safe Drinking Water Act; Resource Conservation and Recovery Act; Comprehensive Environmental, Response, Compensation, and Liability Act; Emergency Planning and Community Right-to Know Act; and related toxic laws. Provides overview of roles of judicial and legislative agencies. Modular courses EHST-131A and EHST-131B together will also meet degree requirements for this course.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): None (ENG-1010 College Composition I recommended for students without prior knowledge of law).

EHST-1330 Hazardous Waste Operations and Emergency Response
02 Semester Credits

Comprehensive instruction in health and safety planning and procedures for: uncontrolled hazardous waste site work; hazardous waste treatment, storage or disposal facilities (TSDFs) work; and emergency responses to hazardous materials releases. Students must complete 40 contact hours of instruction to meet OSHA's certification requirements in training portion of 29 CFR 1910.120 (the "HAZWOPER" standard). Ten additional hours of lecture required to meet OSHA requirements.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

EHST-1350 Health and Safety in the Workplace
03 Semester Credits

Introduction to occupational safety and health management in general industry. Includes in-depth exploration of Occupational Safety and Health Administration (OSHA) standards, Worker Compensation

programs, and proactive safety promotion such as worker training and integration of safety into quality programs.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

EHST-2220 EH&S Management Systems
02 Semester Credits

Overview and history of Environmental Health & Safety management systems (MSs), focusing on the International Standards Organization 14000 series and the OHSAS 18000 series. Addresses MS auditing; setting an environmental/safety policy; specifying objectives and targets; risk assessments; waste minimization; the benefits of MS system certification; regulatory and certification requirements; implementing MS programs; monitoring and measuring program results; and reviewing programs to ensure continual improvement. Uses case study to illustrate development of an EH&S management system.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law, or EHST-131A Introduction to Environmental Law - Water and Air, and EHST-131B Introduction to Environmental Law - Remediation, or departmental approval.

EHST-2300 International Environmental Issues
02 Semester Credits

Overview of environmental issues in the U.S. and internationally. Analysis of global environmental issues including endangered species, overpopulation, ocean dumping, border problems, deforestation, Mexican environmental regulations and global warming. Emphasis on management options and use of international laws and treaties, especially the North American Free Trade Agreement.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A Introduction to Environmental Law - Water and Air and EHST-131B Introduction to Environmental Law - Remediation; or departmental approval.

EHST-2320 Environmental Negotiation, Mediation, and Conflict Resolution
02 Semester Credits

Overview to environmental dispute resolution in environmental policy and decision making. Examination of successful negotiation techniques and how and when to use mediation and other conflict resolution techniques. Includes negotiation, mediation and conflict resolution simulations and environmental case studies. Examines listening and interpersonal skills.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A Introduction to Environmental Law - Water and Air and EHST-131B Introduction to Environmental Law - Remediation; or departmental approval.

EHST-2330 Ecotourism

02 Semester Credits

Examination of ecotourism as an economic development and conservation activity. Discussion and analysis of human dimensions of ecotourism and impacts of ecotourism on cultural, political and social systems of host country or region. Organizations and groups, which provide ecotourism opportunities, are identified and the career opportunities in ecotourism are discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A Introduction to Environmental Law - Water and Air and EHST-131B Introduction to Environmental Law - Remediation; or departmental approval.

EHST-2341 Hazardous Materials Transportation

02 Semester Credits

Detailed study of U.S. Department of Transportation (DOT) regulations as well as an introduction to international transportation organizations and their rules for air and vessel transportation. Students learn to interpret DOT regulations, recommend compliance strategies, and select packaging, labeling, documentation and placarding for selected hazardous materials.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A Introduction to Environmental Law - Water and Air and EHST-131B Introduction to Environmental Law - Remediation; or departmental approval.

EHST-2351 Emergency Planning and Response

02 Semester Credits

Develop emergency response contingency plan for a facility or community. Preparedness includes analyzing hazards, writing and implementing the contingency plans, training employees for an emergency, and evaluating the effectiveness of the contingency plan.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A Introduction to Environmental Law - Water and Air and EHST-131B Introduction to Environmental Law - Remediation; or departmental approval.

EHST-2361 Environmental Sampling and Analysis

04 Semester Credits

Covers the methodology of obtaining, managing and interpreting the analysis results of environmental media samples, including air, water, ground water and soil, and various waste samples. Quality control and quality assurance policies and procedures are emphasized. Competency gained in interpreting results that can be used in decision-making processes related to hazardous materials.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1060 Survey of Mathematics.

EHST-2371 Occupational Safety and Health Act/Department of Transportation Refresher

01 Semester Credit

Provides annual OSHA refresher training to the hazardous waste workers and supervisors covered under 29 CFR 1910.120 (HAZWOPER) and DOT refresher training to hazmat employees covered under 49 CFR 172. Covers regulations, medical surveillance, hazard recognition, toxicology, site control, safe work practices, monitoring, personal protective equipment, decontamination and site safety.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): EHST-1330 Hazardous Waste Operations and Emergency Response, or departmental approval.

EHST-2380 Risk Assessment

02 Semester Credits

Basic principles and methods of conducting a risk assessment. Examines both value and limitations of risk assessment. Focuses on environmental and health risks and includes an overview of toxicological principles. Reviews how risk management decisions are made in public and private sectors. Examines how to communicate environmental and health risk, public policy choices and trade-offs to public.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1301 Introduction to Environmental Technology, or departmental approval.

EHST-2390 Solid and Hazardous Waste Management

03 Semester Credits

Study of statutes, regulations and guidelines pertaining to hazardous waste management, with an emphasis on the requirements of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended. Management of hazardous wastes including "cradle to grave" requirements and enforcement strategies. Involves reading, interpreting, and summarizing sections from the Code of Federal Regulations and the United States Code.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): EHST-1310 Introduction to Environmental Law; or EHST-131A Introduction to Environmental Law - Water and Air and EHST-131B Introduction to Environmental Law - Remediation; or departmental approval.

EHST-2940 Field Experience

01-02 Semester Credits

Supervised paid or unpaid field experience, which relates to individual student's occupational objectives. Students are assigned to a facility, governmental institution, site or project to study regulatory compliance of federal and state environmental, health and/or safety laws and regulations.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 hours per semester (1) credit/ 360 hours per semester (2) credits.

Prerequisite(s): EHST-1301 Introduction to Environmental Technology, EHST-1310 Introduction to Environmental Law and departmental approval.

EHST-2991 Professional Practice

03 Semester Credits

Capstone course for Environmental, Health and Safety Technology. Cultivates critical problem solving skills in an environmental, health and safety context utilizing simulated and/or actual scenarios. Draws upon the student's legal research skills and technical knowledge to compile legally and scientifically justifiable solutions for mock clients within the confines of budgetary and time constraints. Requires reflection on degree outcomes and preparedness for initial employment or promotion in the Environmental, Health and Safety Field.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: sophomore standing.

FINANCIAL MANAGEMENT - FIN

FIN-1061 Personal Finance

03 Semester Credits

Introductory course designed to prepare a student to make educated decisions regarding consumer choices and personal financial goals. These decisions impact consumer purchasing and credit, insurances, medical care, home ownership, income taxes, investment and savings, and retirement and estate planning.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

FIN-2100 Financial Management

03 Semester Credits

Analytical study of basic principles of financial management, financial analysis and planning, working capital management, capital budgeting, capital structure, dividend policy, financial markets, and financial instruments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1340 Managerial Accounting, or departmental approval: equivalent courses or equivalent work experience.

FIN-2830 Cooperative Field Experience

01-03 Semester Credit

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

FIRE TECHNOLOGY - FIRE

FIRE-1100 Principles of Emergency Services

03 Semester Credits

Provides an overview to fire protection including history, organization of services, local and state laws in addition to nomenclature, chemistry and physics of fire protection systems, strategy and tactics.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Admission to or completion of accredited Fire Academy.

FIRE-1200 Principles of Fire and Emergency Services Safety and Survival

02 Semester Credits

Introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to or completion of Fire Academy.

FIRE-1300 Fire Tactics and Strategy

03 Semester Credits

Pre-planning of fire fighting operation, size-up fire scene, employment of fire personnel and equipment. Overall command pattern at fire scene.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FIRE-1000 Introduction to Fire Science.

FIRE-1400 Chemistry of Hazardous Materials

02 Semester Credits

Analysis of chemical reactions as causative agent of fire. Includes redox reactions, reaction rates, toxic compounds and hazardous combinations of chemicals. Safety procedures in handling hazardous materials, transporting and defusing them.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): FIRE-1000 Introduction to Fire Science.

FIRE-1500 Fire Behavior and Combustion

02 Semester Credits

Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to or completion of Fire Academy.

FIRE-1600 Fire Prevention

03 Semester Credits

Provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Successful completion of Fire Academy.

FIRE-2321 Fire Protection Systems

02 Semester Credits

Provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to or completion of Fire Academy.

FIRE-2351 Building Construction for Fire Protection

03 Semester Credits

Provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Completion of Fire Academy.

FIRE-2401 Fire Protection Hydraulics and Water Supply

03 Semester Credits

Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Successful completion of Fire Academy.

FIRE-2600 Fire Investigation Methods

03 Semester Credits

Principles of fire investigation, arson laws, interrogation of witnesses. Use of photography in fire investigation. Preparation of reports. Collection and presentation of arson evidence in court.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FIRE-1000 Introduction to Fire Science.

FIRE-2720 Fire Service Training and Public Relations

02 Semester Credits

Methods and techniques of instruction for fire personnel. Organization of training programs and preparation of training materials. Study of public relations as related to fire service with emphasis on building good will and explanation of fire service activity in the community.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): FIRE-1000 Introduction to Fire Science.

FIRE-2730 Managing Fire Services

03 Semester Credits

Total management of effective fire and medical emergency services on immediate basis. Budget, personnel, labor relations, measurement and evaluation of productivity of service. Training and supervision of fire service personnel.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FIRE-1300 Fire Tactics and Strategy.

FIRE-2830 Cooperative Field Experience

01-03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

FIRE-2990 Fire Technology Professional Study

01 Semester Credits

Capstone course in Fire Technology. Provides students with opportunities to apply technical, oral, and written skills; to prepare resumes and/or portfolios and develop interview skills; to study history and trends in fire technology. Students will choose an area compatible with their interest and background, and facilitated by the instructor, prepare a report, presentation, resume, or a study.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Successful completion of minimum 20 credits in FIRE.

FRENCH - FREN**FREN-1010 Beginning French I
04 Semester Credits**

Introduction to French through multiple approaches with emphasis on speaking and understanding. Practice in conversational French and aural comprehension of topics of daily interest. Some practice in writing basic sentences and small simple paragraphs on relevant topics, and reading short paragraphs.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

**FREN-1020 Beginning French II
04 Semester Credits**

Development of proficiency in speaking, understanding, reading, and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): FREN-1010 Beginning French I, or one year of high school French; or departmental approval.

**FREN-1040 Study Abroad in Quebec- Beginner Level
04 Semester Credits**

Beginner course in functional French, with an emphasis on speaking, reading, writing and understanding oral and written French in various situations and texts. Designed to enhance knowledge and appreciation of French Canadian culture. This five-week program begins with four pre-trip orientation sessions followed by participation in a three-week French language immersion program in the province of Quebec.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): FREN-1010 Beginning French I, or departmental approval.

**FREN-2010 Intermediate French I
03 Semester Credits**

Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Grammar review. Practice in writing compositions. Introduction to civilization and literature of France.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FREN-1020 Beginning French II, or two years of high school French; or departmental approval.

**FREN-2020 Intermediate French II
03 Semester Credits**

Intensive exercises in written and oral expression. Additional grammar review and vocabulary building. Further exploration of French literature.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FREN-2010 Intermediate French I, or three years of high school French; or departmental approval.

**FREN-2040 Study Abroad in Quebec -Intermediate Level
04 Semester Credits**

This intermediate course concentrates on the study of functional French, with an emphasis on speaking, reading, writing and understanding oral and written French in various situations and texts. It is also aimed at enhancing the student's knowledge and appreciation of French Canadian culture. This five-week program begins with four pre-trip orientation sessions, followed by participation in a three-week French language immersion program in the province of Quebec.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): FREN-1020 Beginning French II, or departmental approval.

**FREN-2410 French Conversation and Composition
03 Semester Credits**

Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Practice in writing compositions. Discussion of French history and French culture.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FREN-2020 Intermediate French II, or three years of high school French; or departmental approval.

**FREN-2420 French Civilization and Literature
03 Semester Credits**

Introduction to French civilization and literature. Emphasis on the interrelationship between history and geography of France and its culture. Readings in French literature of the 19th and 20th centuries. Highlights of representative authors and their works. Emphasis on oral discussion.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): FREN-2020 Intermediate French II, or three years of high school French; or departmental approval.

GENERAL STUDIES - GEN**GEN-1000 Introduction to College
01 Semester Credit**

Orients students to the College's programs, services, and policies. Topics may include student resources, college and student expectations, academic support services, financial aid, degree programs, and student rights and responsibilities.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

GEN-1010 Personal Development

02 Semester Credits

Experience-based course designed to explore individual resources, values, goals, time-management and decision making. Focus placed on structured activities which build self-esteem, motivation, self-confidence, empathy and communication skills in a group setting.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

GEN-1022 Strategies for Success

03 Semester Credits

Information and methods helpful for student success. Planning, time management, communication skills, relationships, memory, reading comprehension and retention, note taking and test taking techniques. Stress management and techniques for overcoming test anxiety will be practiced. Diversity, college resources, and learning styles will be explored.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG 0990-Language Fundamentals II, or departmental approval.

GEN-1032 Information Literacy and Library Research

02 Semester Credits

Hands-on experience using the Internet, print and electronic library resources to locate information for course related and personal needs. Emphasis is on the use of search strategies, various research tools, and the application of critical thinking to library research.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

GEN-1040 Career Exploration

02 Semester Credits

Survey of career development theory. Emphasis on nature and meaning of work, values, interests, functional skills, attitudes and needs as related to career development process. Sources of occupational information discussed. Series of self-assessment inventories utilized.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

GEN-1060 Creative Parenting Skills for Students

02 Semester Credits

Course applies a developmental framework in examining theoretical approaches to the process of parenting. Explores expectations, influences and strategies of parenting with focus on attitudes and behaviors. Topics include facilitating the parent-child relationship from birth through adolescence, parenting techniques, adaptations of the traditional family structure, contemporary discipline techniques, and community resources. These topics will be addressed within the context of cultural diversity.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

GEOGRAPHY - GEOG

GEOG-1000 Introduction to Geography

03 Semester Credits

Introduction and description of the four traditions of geography: earth science, cultural-environmental, location, and regional geography.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OSS007

GEOG-1010 World Regional Geography

03 Semester Credits

Study of present issues and future prospects of developed and developing countries. Emphasis on economic activities determined by physical environment, social and cultural characteristics, and political stability.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OSS008

GEOG-1030 Environmental Geography

03 Semester Credits

Study of issues created by a rapidly increasing world population causing depletion of world energy resources and agricultural crises. Other environmental problems including pollution, destruction of rain forests, overgrazing, and loss of habitat considered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

GEOG-1050 Africans in the Americas

03 Semester Credits

Study of world regions touched by the African Diaspora, especially Africa, Caribbean, Brazil, and United States. Focus on characteristics of each region, demographic changes, and variations that shaped culture during and after slavery and to the present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

GEOG-1510 Regional Geography of the United States and Canada

03 Semester Credits

Regional geography of the United States and Canada noting significant characteristics of each region. Physical setting, economic activities, cultural diversity, social conditions, and political identity of each region studied.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

GERMAN - GER

GER-1010 Beginning German I 04 Semester Credits

Introduction to German through multiple approaches with emphasis on speaking and understanding. Practice in conversational German and aural comprehension of topics of daily interest. Some practice in writing basic sentences and small simple paragraphs on relevant topics and reading short paragraphs.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

GER-1020 Beginning German II 04 Semester Credits

Development of proficiency in speaking, understanding, reading, and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): GER-1010 Beginning German I, or one year of high school German, or departmental approval.

GER-2010 Intermediate German I 03 Semester Credits

Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Grammar review. Practice in writing compositions. Introduction to German civilization and literature.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): GER-1020 Beginning German II, or two years of high school German, or departmental approval.

GER-2020 Intermediate German II 03 Semester Credits

Intensive exercises in written and oral expression. Additional grammar review and vocabulary building. Further exploration of German literature.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): GER-2010 Intermediate German I, or three years of high school German, or departmental approval.

HEALTH - HLTH

HLTH-1100 Personal Health Education 03 Semester Credits

Introduction to meaning and scope of health as related to individual, family, community and society. Focuses on introspective view of physical, emotional, intellectual, social, occupational, environmental, and spiritual dimensions of health with emphasis on mechanism for positive behavior change.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HLTH-1230 Standard First Aid and Personal Safety 01 Semester Credit

Basic level first aid and one-person CPR course intended to provide knowledge and skills necessary to help sustain life and minimize the consequences of injury or sudden illness until advanced medical help arrives. Special emphasis placed on identifying and eliminating potentially hazardous conditions, recognizing emergencies and making appropriate decisions for first aid care. Upon successful completion, student is eligible for certification in First Aid/CPR/AED by the American Heart Association or the American National Red Cross.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

HLTH-1310 Cardiopulmonary Resuscitation 01 Semester Credit

[This course is cross-listed as EMT-1310. Credit can only be earned once for either course.] The CPR for Healthcare Providers teaches the management of respiratory and circulatory emergencies in adults, children, and infants. The Heartsaver First Aid teaches the management of illness and injury in the first few minutes until professional help arrives. Instruction and treatment methods to meet American Heart Association (AHA) or American Red Cross (ARC) standards for CPR.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

HLTH-1400 Childhood Health, Safety and Nutrition 03 Semester Credits

Focuses on nutrition, health, and safety needs of infants and young children. Training provided in communicable disease recognition, prevention and management, first aid, infant/child CPR, and child abuse recognition and prevention, as required by the Ohio Day Care Licensing Rules. Nutritional requirements of infants and young children, meal planning and menu evaluation, principles of hygiene and safety in storage, preparation and serving of food are addressed. Positive health practices emphasized as integral elements in nurturing a child's total development.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HLTH-2500 Women's Health Issues 03 Semester Credits

Exploration of all dimensions of women's health, identification of health risks unique to women, evaluation of traditional and non-traditional approaches to health care problems and development of personal strategies for selection of health enhancing behaviors.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HEALTH INFORMATION MANAGEMENT TECHNOLOGY - HIM

HIM-1010 Basic Medical Transcription

01 Semester Credit

Introduction to the basic concepts of medical transcription with emphasis on transcription equipment, transcribing techniques, use of medical reference books, and practice in transcribing various reports.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval.

HIM-1060 Health Unit Coordinator

03 Semester Credits

Specific application of health unit coordinating duties and responsibilities relating to entry level positions. Basic information with emphasis on clerical tasks: patient processing for admissions, transfers, discharges, charts, preoperative, postoperative, scheduling and processing orders. Accuracy and appropriate understanding with physician, nursing, and dietary treatment orders.

Accuracy in transcribing medication orders, laboratory orders and other diagnostic orders. Emphasis on Allied Health professional principles.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MA-1020 Medical Terminology I.

HIM-1112 Physician Office Coding

04 Semester Credits

Introduction to basic concepts of coding using ICD-10-CM (International Classification of Diseases, 10 Revision, Clinical Modification) for diseases and CPT (Current Procedural Terminology) to meet requirements for physician office coding and billing.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MA-1020 Medical Terminology I and ENG-1010 College Composition I.

HIM-1121 Medical Billing Practices

02 Semester Credits

Introduction to basic terminology regarding medical insurance, third party payers, reimbursement methodologies, claims processing procedures for posting payments and claims follow-up in physician office setting.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MA-1020 Medical Terminology I and ENG-1010 College Composition I.

HIM-1301 Introduction to Health Information Management

03 Semester Credits

Introduction to field of health information management technology (HIMT) including overview of the profession; functions of the HIMT department; purposes, uses and flow of patient information through health care system. Introduction to the history of Western medicine, allied

health professions, health care organizations and the operation of modern health care delivery.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I and MA-1020 Medical Terminology I and departmental approval: admission to the program.

HIM-1311 Legal Aspects of Health Care

03 Semester Credits

Introduction of legal and ethical issues applicable to health information including confidentiality; release of information; legislative process; the court system; legal vocabulary; retention guidelines; patient rights/advocacy; advance directives and ethics.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MA-1020 Medical Terminology I and ENG-1010 College Composition I.

OAN Approved: OHL021

HIM-1401 Systems in Healthcare Delivery

02 Semester Credits

Overview of various health record systems and the role of the Health Information Technician in non-acute care settings, such as private practices, extended care facilities and nursing homes.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to program.

HIM-1411 Healthcare Statistical Applications & Research

02 Semester Credits

Introduction to use, collection, presentation, and verification of health care data including fundamental concepts of descriptive statistics; data validity and reliability; data presentation techniques; vital statistics; and healthcare institutional research.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HIM-1301 Introduction to Health Information Management, and HIM-1311 Legal Aspects of Health Care, and completion of Mathematics 1000 level or higher.

HIM-1423 Health Data Documentation, Sources and Classification Systems

03 Semester Credits

Documentation requirements for complete and accurate health records as required by licensing, certifying and accrediting agencies; forms design; functions of data analysis and abstracting; healthcare data sets and standards; clinical vocabularies and classification standards; primary and secondary healthcare data sources.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): HIM-1301 Introduction to Health Information Management, and HIM-1311 Legal Aspects of Health Care.

HIM-1431 Healthcare Informatics and Information Management**03 Semester Credits**

Introduction to using and understanding the Electronic Health Record (EHR), varieties of computerized health records, and other healthcare informatic software systems.

Also includes introduction to project management software; strategic information systems planning; and software implementation in the healthcare setting.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, and HIM-1311 Legal Aspects of Health Care, and HIM-1301 Introduction to Health Information Management

HIM-2130 Coding with CPT (Current Procedural Terminology)**02 Semester Credits**

Theories, concepts and applications of Current Procedural Terminology (CPT) coding and its relationship to the Centers for Medicare and Medicaid Service's Healthcare Common Procedure Coding System (CMS/HCPCS).

Instruction will be based from textbook, computer applications and healthcare records.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): BIO-2600 Pathophysiology, and concurrent enrollment in HIM-1411 Healthcare Statistical Applications & Research, or departmental approval.

HIM-2160 Coding with ICD-10-CM**02 Semester Credits**

Principles, theories, concepts and applications required to code diseases and procedures using the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Classification System.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HIM-1423 Health Data Documentation, Sources and Classification Systems, MA-1020 Medical Terminology I, and BIO-2600 Pathophysiology.

HIM-2200 Project Management for the Health Information Management Professional**02 Semester Credits**

Organizing and managing effective project teams, from planning and scheduling to cost management, including use of project management software. The latest business developments and challenges and issues such as project constraints, stakeholder issues, project charter, and how projects relate to an organization's strategic plan. Effective communication both within and outside of a team.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HIM-1431 Healthcare Informatics and Information Management and HIM-1423 Health Data Documentation, Sources and Classification Systems; or departmental approval.

HIM-2260 Coding with ICD-10-PCS**02 Semester Credits**

Coding with ICD-10-PCS will prepare and train Health Information Management Technology students to

understand the format used and how to build an ICD-10-PCS procedure code. Key terms related to ICD-10-PCS, the system's use and the different sections contained within the PCS coding system: medical and surgical, obstetrics, placement, administration, measurement and monitoring; extracorporeal assistance, performance and therapies; osteopathic, chiropractic, and other procedure and treatment sections.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HIM-2160 Coding with ICD-10-CM, or departmental approval.

HIM-2312 Quality Assessment and Improvement**03 Semester Credits**

Introduction to disease and health registries and to data quality assessment activities being performed in health care facilities.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HIM-1411 Healthcare Statistical Applications & Research, and HIM-1423 Health Data Documentation, Sources and Classification Systems, and HIM-1431 Healthcare Informatics and Information Management.

HIM-2401 Intermediate Coding**02 Semester Credits**

Continuation in the study of coding and classification systems in a variety of healthcare settings. Upon completion students should be able to apply coding principles to correctly assign codes using the International Classification of Diseases, Tenth Revision, Clinical Modification and Procedural Coding System (ICD-10-CM and PCS) and Current Procedural Terminology (CPT) and apply systems to optimize reimbursement.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HIM-2160 Coding with ICD-10-CM; and HIM-2130 Coding with CPT (Current Procedural Terminology); or departmental approval.

HIM-2410 Management Practices in Health Information**02 Semester Credits**

Management principles used in managing health information functions and personnel, with emphasis on the duties and responsibilities of supervisor in coordinating goals of a health information management department; training of personnel; and the concepts of continuous quality improvement.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): HIM-2312 Quality Assessment and Improvement, or concurrent enrollment; or departmental approval.

HIM-2430 Medical Reimbursement Methodologies
02 Semester Credits

Reimbursement issues and systems, including: compliance environment payors, reimbursement vocabulary and systems such as Diagnostic Related Groups (DRGs), Resource Based Relative Value Scale (RBRVS), Ambulatory Payment Classifications (APC), and the chargemaster.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): HIM-1411 Healthcare Statistical Applications & Research, and BIO-2600 Pathophysiology; or departmental approval.

OAN Approved: OHL022

HIM-2440 Fundamentals of Healthcare Workflow and Process Analysis

02 Semester Credits

Evaluation and analysis of workflow in a healthcare setting to facilitate redesign of that workflow. Intermediate capstone course for utilizing Microsoft Project Management Software for implementation of a project.

Lecture 01 hour. Laboratory 03 hours.

Other Required Hours: Project may be assigned in a clinical setting.

Prerequisite(s): HIM-2200 Project Management for the Health Information Management Professional, or departmental approval.

HIM-2851 Practicum I
03 Semester Credits

Supervised practicum designed to allow student to apply technical knowledge and skills learned in classroom to procedures performed in health information management department. Assignments made to various types of health care facilities to gain exposure to health information practices.

Lecture 00 hours. Laboratory 00 hours.

*Other Required Hours: Practicum: 14 hours per week.
Seminar: One hour per week.*

Prerequisite(s): HIM-1301 Introduction to Health Information Management, and HIM-1411 Healthcare Statistical Applications & Research, and HIM-1423 Health Data Documentation, Sources and Classification Systems; and HIM-1431 Healthcare Informatics and Information Management, and departmental approval.

HIM-2861 Practicum II
03 Semester Credits

Capstone course in Health Information Management. Second of two supervised practicums designed to allow student to apply technical knowledge and skills learned in classroom to procedures performed in health information management department. Assignments made to various

types of health care facilities to gain exposure to health information practices.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours a week.

Seminar: 1 hour per week.

Prerequisite(s): HIM-2130 Coding with CPT (Current Procedural Terminology), and HIM-2150 Coding with ICD-9-CM, and HIM-2312 Quality Assessment and Improvement, and HIM-2851 Practicum I, or departmental approval.

HEALTH TECHNOLOGY - HTEC

HTEC-1000 Introduction to Patient Care
01 Semester Credits

Discussion, demonstration and practice of basic patient care skills. Introducing principles of patient care including professional communication with diverse populations, safe patient mobility skills, vital signs, standard precautions and hand hygiene.

Lecture .5 hour. Laboratory 1.5 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment; and MA-1020 Medical Terminology I, or concurrent enrollment; and eligibility for MATH-1270 Intermediate Algebra or higher.

HTEC-1040 Health Career Exploration
01 Semester Credit

Introduction to variety of health career options with emphasis on qualifications, job responsibilities and employment opportunities. Includes identifying components from each health career that relate to lifestyle risk factors. Discusses how to become educated consumers with regards to seeking accurate health information.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

HTEC-1100 Allied Dental Pharmacology
02 Semester Credits

Survey course acquainting Dental Assisting students with basic principles and concepts of pharmacology. Provides a general review of therapeutic use of drugs in a dental/medical emergency. Emphasizes indications and contraindications of drugs relating to dental anesthetics.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Dental Assisting Program.

HTEC-1110 Ethics for Health Care Professionals
01 Semester Credit

Survey course emphasizing basic definitions, concepts and issues of clinical law and ethics for health care professionals. Ethical decision-making models will be explained utilizing the professional-patient relationship and case studies.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HTEC-1120 Critical Thinking in Healthcare
01 Semester Credit

Overview of principles involved in critical and creative thinking with an emphasis on practical applications in the health care environment. A discussion of skillful analysis, assessment and communication in the problem-solving process.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HTEC-1610 Introduction to Pharmacology
02 Semester Credits

General principles and concepts of pharmacology. Provides understanding of indications, uses, doses and contraindications associated with individual drugs as well as mechanisms of drug administration and therapeutic management of patients with specific disease processes. Review of basic mathematics related to correct calculation of drug dosages and preparation of solutions.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HISTORY - HIST**HIST-1010 History of Civilization I**
03 Semester Credits

Introduction to study of world civilizations from ancient times to beginning of modern era.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OHS041

HIST-101H Honors History of Civilization I
03 Semester Credits

Introduction to world civilizations from ancient times to beginning of modern era. Study of different world cultures and civilizations and how they have interacted over time to create successive patterns of regional and global integration. Historical development of the world with emphasis on critical examination of primary source documents.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I or departmental approval.

HIST-1020 History of Civilization II
03 Semester Credits

Introduction to study of world civilizations from 17th century to present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OHS042

HIST-102H Honors History of Civilization II
03 Semester Credits

Introduction to world civilizations from beginning of modern era to the present. Examination of different world cultures and civilizations and how they have interacted over time to create successive patterns of regional and global integration. Historical development of the world with emphasis on critical examination of primary source documents.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I or departmental approval.

HIST-1510 United States History to 1877
03 Semester Credits

Introduction to study of United States history from Age of Exploration to end of Reconstruction.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OHS043

HIST-151H Honors United States History to 1877
03 Semester Credits

Introduction to study of United States history from Age of Exploration to end of Reconstruction. Analysis of historical problems and use of primary sources in study of history.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, or departmental approval.

HIST-1520 United States History Since 1877
03 Semester Credits

Introduction to study of United States history from post Civil War/Reconstruction to present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OHS044

HIST-152H Honors United States History Since 1877
03 Semester Credits

Introduction to study of United States history from post-Civil War/Reconstruction to present. Analysis of historical problems and use of primary sources in study of history.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, or departmental approval.

HIST-1610 American Studies

03 Semester Credits

Introduction to American Studies. Discussion of selected issues and institutions in American civilization; multidisciplinary approach to subject matter utilizing concepts from various social science and humanities disciplines.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HIST-1630 History of Immigration in America

03 Semester Credits

Study of immigration in America. Discussion of ethnic institutions; explanation of continuity and change between first, second and third generations of an immigrant group, and exploration of relationships between and among different groups; analysis of nativism and restrictionism, and explanation of immigrant contributions to America.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HIST-1700 History of Africa

03 Semester Credits

General survey of African history with special emphasis on pre-colonial (pre-1500) Africa plus political, economic and social challenges of nineteenth and twentieth centuries. Importance of Islam and emergence of South Africa from apartheid era.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HIST-179H Honors Contract in History

01 Semester Credit

Honors Contract complements and exceeds requirements and objectives for an existing HIST 1000-level honors course through the formulation of a contract with faculty mentor. In conjunction with faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of six credits of different topics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level honors course in History, whose instructor approves the Honors Contract.

HIST-2020 Women, Science and Technology

03 Semester Credits

[This course is cross-listed as WST-2020. Credit can only be earned once for either course.] Study of gendered relationships in scientific theory, organization & dissemination of scientific expertise, technological development and the impact of these on health care,

medicine, business, manufacturing, cultural norms and women's experience.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): WST-1510 Introduction to Women's Studies or ENG-1010 College Composition I; or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment.

HIST-2030 Islamic History

03 Semester Credits

Introduction to the historical traditions and events of the Muslim world; examines geographic diversity, cultural variations and interpretations of Islam and the relationships between Islamic, Judaic and Christian historical traditions

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or departmental approval; permission of instructor.

HIST-2040 Native American History

03 Semester Credits

Historical study of indigenous populations in the Americas from pre-colonial times to the present; special focus on the social, political, economic and spiritual lives of Native American nations in North America.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

HIST-2051 History of Russia to 1917

03 Semester Credits

Growth, development and decline of Kievan state; evolution of Muscovite tsardom and expansion of Russian Empire to 1917. Geopolitical, social, cultural, and intellectual development of Russian state; emphasis on theory of tsardom which led to emergence of distinct civilization in Russia.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Any 1000-level history or political science course; or departmental approval.

HIST-2060 Modern Russian History and Politics

03 Semester Credits

Development of U.S.S.R. since collapse of tsarist monarchy to dissolution of Soviet Union and Communist system; origins, development, establishment of power and rule by Communist government; analysis of development and implementation of domestic and foreign policies.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Any 1000-level history or political science course; or departmental approval.

HIST-2070 African-American Women in History**03 Semester Credits**

Historical study of African-American women from their cultural roots in Africa, experiences during the Middle Passage, adaptation and influence in the Americas, and special focus on North America from colonial times to present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Any 1000-level history or political science course; and eligibility for ENG-1010 College Composition I; or departmental approval.

HIST-2080 Latin American History**03 Semester Credits**

Study of history of Latin America from indigenous civilizations to present time. Analysis of social, cultural, political, and economic development of the region and relations between Latin American nations and the United States.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HIST-2090 Ohio History**03 Semester Credits**

Study of history of Ohio from Native American societies and origins of statehood to present time. Analysis of environmental, political, social, economic, and intellectual aspects of the state. Role of transportation, industrialization, and immigration as well as contributions of women and cultural groups in state's development. Analysis of role of Ohio in American development.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HIST-2150 African American History to 1877**03 Semester Credits**

Analysis and study of African American experiences from African origins through Atlantic slave trade, adaptation to the Americas, and influence on American culture from slavery to emancipation and Reconstruction

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or departmental approval.

HIST-2160 African American History 1877-present**03 Semester Credits**

Analysis and study of African American experience from the end of Reconstruction, development of institutionalized racial discrimination, growth of racial advancement organizations, migration to cities, development of racial consciousness, and struggle for civil rights and political power until present time

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or departmental approval.

HIST-2520 Hitler and the Holocaust**03 Semester Credits**

Study of Adolf Hitler, Nazi Germany and the Holocaust. Topics include National Socialist ideology; history of anti-Semitism; political history of Germany before, during, and after World War One; life of Hitler; Nazi seizure of power; Second World War; and the Holocaust.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and any 1000 level History or Political Science course.

HIST-2660 Women in American History**03 Semester Credits**

Study of changing role of women in America from colonial times to present. Introduction to current research techniques used to reconstruct family, political and work roles; special emphasis on participation in social reforms leading to women's rights, suffrage and feminist movements; impact of race, gender and region on gender perspectives and conflicts; and evaluation of contemporary trends.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Any 1000-level history or political science course; and eligibility for ENG 1010 College Composition I, or departmental approval.

HOSPITALITY MANAGEMENT - HOSP
HOSP-1010 Introduction to the Hospitality Industry**02 Semester Credits**

Comprehensive tour through fascinating and challenging related fields and career opportunities in hospitality industry; travel and tourism, lodging, food service, meetings, conventions and expositions, leisure and recreation, and beverage operations. Mapping of specific positions including requirements of job duties, skills, knowledge, personality attributes, physical abilities, and working conditions. Basic keys to successful career in service-based industry. Provides basis for understanding lodging and food and beverage through overview of industry in the Greater Cleveland area, nationally, and globally, and through examination of current trends. Field trips may be required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I, or departmental approval: industry experience.

HOSP-1020 Sanitation and Safety

02 Semester Credits

Examines sanitation and safety practices in food service and lodging establishments. Management oriented treatment for prevention of food borne illnesses using HACCP principles of safe food handling, sanitary design, care of facilities and equipment, pest control, self-inspection, and interpretation of food service laws. Causes and prevention of accidents and elementary first aid including the Heimlich Maneuver and CPR. Students plan and practice employee training. Students must pass a national exam, which will provide State Health Department Certification. Field trips may be required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I, or departmental approval: industry experience.

HOSP-1031 Fundamentals of Culinary Arts

03 Semester Credits

Introduction to food preparation techniques, culinary theory, and equipment used in commercial food service. Basic concepts of kitchen organization and operation, heat transfer, basic terminology, use of standardized recipes, weights and measures, product evaluation, recipe conversion, food composition and introduction to commercial equipment and work methods. American Culinary Federation competency skills included. Field trips may be required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-1060 Survey of Mathematics, and eligibility for ENG-1010 College Composition I, and HOSP-1020 Sanitation and Safety or concurrent enrollment; or departmental approval: industry experience.

HOSP-1040 Customer Service

02 Semester Credits

Theories and principles of guest service in hospitality industry. Discussions and practice of basic skills and competencies needed in entry level food and beverage service positions to provide quality guest service as recommended by the National Restaurant Association. Introduction to selected basic competencies as recommended by Educational Institute of American Hotel and Lodging Association. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-0950 Beginning Algebra I, and eligibility for ENG-1010 College Composition I, and HOSP-1020 Sanitation and Safety or concurrent enrollment; or departmental approval: industry experience.

HOSP-1180 Event Planning Essentials

02 Semester Credits

Introduction to the tasks required to plan a successful event. Emphasis on key characteristics of successful event planners, core principles of event planning, vocabulary, and basic management skills. Field trips may be required.

Industry experience at a community event or function may be required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

HOSP-1360 Fundamentals of Restaurant/Foodservice Management

03 Semester Credits

Introduction and overview of many aspects of restaurant/foodservice operations and the knowledge and skills needed by various operational and management positions. Emphasis will be on front of the house operations including various types of restaurants concepts, customer service, marketing, menu development, human resources, current trends, historical overview, nutrition and ethics, technology, facilities and design, as well as a variety of day-to-day managerial and operational concerns. Focus will be on restaurant operations, but banquet, catering and managed services will also be covered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition, and eligibility for MATH-1060 Survey of Mathematics, or higher; or departmental approval: industry related experience.

HOSP-1380 Dimensions of Tourism

03 Semester Credits

Cross-disciplinary approach to examine many facets of tourism. Social science perspective provides students with practical knowledge that can effectively be applied to hospitality industry. Terminology, concepts, and various specialized fields that comprise the industry reviewed. Advanced information that serves as bridge to further analysis or study provided. Field trips may be taken to Cleveland area attractions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry or concurrent enrollment; or departmental approval: industry experience.

HOSP-1451 Contemporary Cuisine

04 Semester Credits

Preparation of contemporary cuisine with a wide variety of plate production techniques including appetizers, breads, soups, salads, side dishes, entrees, and desserts. Apply food pairing, plating, and garnishing techniques to contemporary cuisine. Skill training based on American Culinary Federation Apprenticeship competencies. Field trips may be required.

Lecture 02 hours. Laboratory 06 hours.

Prerequisite(s): HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1552 Introduction to Baking & Pastries

HOSP-1480 Housekeeping Operations

02 Semester Credits

Fundamentals of professional housekeeping services in lodging industry. Examines basic cleaning methods and equipment currently used; work production and quality control techniques peculiar to housekeeping management; factors determining frequency workload and staffing. Housekeeping procedures and management placed within context of overall operation of lodging facility. On-site observation and computer-based training at local hotels provide practical application of housekeeping functions. Field trips may be required.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety, and HOSP-1040 Customer Service; or departmental approval: industry experience.

HOSP-1552 Introduction to Baking & Pastries

03 Semester Credits

Daily production of baked goods including yeast breads, pies, cakes, souffles, mousses, danish and croissants. Theoretical and practical foundation in baking production. Develop skills and knowledge that meet American Culinary Federation standards for quality handcrafted products. Emphasis on discipline, formulas, function of ingredients, proper production techniques and recognizing quality standards. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): Concurrent enrollment in HOSP-1031 Fundamentals of Culinary Arts; and HOSP-1020 Sanitation and Safety or concurrent enrollment, and eligibility for MATH-1060 Survey of Mathematics, and eligibility for ENG-1010 College Composition I.

HOSP-1580 Front Office Operations

02 Semester Credits

Elements of effective front office management, paying particular attention to planning and evaluation of front office operations and to human resources management. Front office procedures and management placed within context of overall operation of a hotel. Systematic approach to front office procedures presented by detailing flow of business through a hotel, from the reservations process to check-out and settlement. On-site observation and computer-based training of front office procedures at local hotels provide practical application of front office functions. Field trips may be required.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry and HOSP-1040 Customer Service.

HOSP-1650 Dining Room Operations

02 Semester Credits

Hands-on work experience in a program on-campus restaurant. Students study, demonstrate and evaluate

various types of dining room service and operational responsibilities. Focus areas include: serving, setup, labor, point of sale technology and management functions. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): HOSP-1031 Fundamentals of Culinary Arts, HOSP-1040 Customer Service, and HOSP-1451 Contemporary Cuisine, or concurrent enrollment; or departmental approval: industry related experience.

HOSP-1680 Beverage Management

02 Semester Credits

Focuses on the beverage management side of foodservice operations with specific attention to: bar and beverage operations, production, purchasing, and marketing of wine, beer, and spirits including formulation of a wine list and pricing models, and the fundamentals of responsible alcohol service.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry.

HOSP-1710 Doing Business as a Personal Chef

03 Semester Credits

Introduction to the career of Personal Chef. Topics include: starting your own personal chef business; professional associations; preparing a personal chef business plan; forms of business organization; vision and mission statements; marketing and sales; legal issues; accounting criteria; client assessment; preparation and performing the service; safety and sanitation issues; packaging foods; and using a computer program to aid in your personal chef business. Approved by the American Personal Chef Association.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I, and HOSP-1020 Sanitation and Safety, or concurrent enrollment, and HOSP-1031 Fundamentals of Culinary Arts, or concurrent enrollment; and eligible for MATH-0950 Beginning Algebra I; or departmental approval: personal or professional cooking skills and experience.

HOSP-1730 International Cuisine

03 Semester Credits

Examines cuisines in countries and regions around the world and focuses on the geographic, cultural, and historic influences that have shaped various world cuisines. Exposure to traditional cooking techniques and varied indigenous ingredients that meld together to produce the basis of world cuisines.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): HOSP-1020 Sanitation and Safety, and HOSP-1451 Contemporary Cuisine, or departmental approval: industry related experience.

HOSP-1940 Culinary Arts/Professional Baking Field Experience

01-03 Semester Credits

Supervised on-site work experience in culinary arts/professional baking. Students required to function in variety of workstations to reinforce learned classroom/lab skills. May be repeated up to three times with departmental approval.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 14 hours per week for 15 weeks (total 210 hours) per credit.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1552 Introduction to Baking & Pastries, and departmental approval: work site approval.

HOSP-1950 Restaurant/Food Service Management Field Experience

01-03 Semester Credits

Hospitality Management Department supervised on-site work experience in restaurant/food service management. Students required to function in variety of workstations to reinforce learned classroom/lab skills. May be repeated up to three times with departmental approval.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 14 hours per week for 15 weeks (total 210 hours) per credit.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1040 Customer Service, and departmental approval: work site approval.

HOSP-1960 Lodging/Tourism Field Experience

01-03 Semester Credits

Hospitality Management Department supervised on-site work experience in Lodging/Tourism Management. Students required to function in variety of workstations to reinforce learned classroom/lab skills. May be repeated up to three times with departmental approval.

Lecture 00 hours. Laboratory 00 hours.

Field Experience: 12 hours per week for 15 weeks (180 total hours) per credit.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, HOSP-1020 Sanitation and Safety, HOSP-1040 Customer Service, and departmental approval: work site approval.

HOSP-2180 Event Planning Workshop

02 Semester Credits

Students will apply knowledge and skills gained in previous courses to plan an event. Event plans will include themes, identification of target market, sponsorships, event promotion, vendor selection, site

selection, pricing, budgets, and evaluation. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HOSP-1180 Event Planning Essentials.

HOSP-2300 Facilities Design and Maintenance

02 Semester Credits

Introduction to knowledge that is needed for clear communication with those in charge of maintenance and engineering departments, lodging and foodservice facilities. Survey of blueprint reading; basic elements of electrical systems and appliance; plumbing and waste systems; heating principles; refrigeration; ventilation and air conditioning; building transportation systems; swimming pools; sound and pollution controls; and energy conservation. Planning and evaluation of facilities and selection of appropriate equipment. Field trips may be required.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, HOSP-1020 Sanitation and Safety, HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1040 Customer Service.

HOSP-2340 Menu Planning for Healthy Living

03 Semester Credits

Study of the central role of the menu in food and beverage operations. Comprehension and application of principles of nutritional guidelines in the menu planning process with an emphasis on locally grown and sustainable agriculture. Practice in researching, writing, presenting, and evaluating menus for food operations to provide for healthier living and profitability. Computer generated menus and menu labeling. Field trips may be required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): HOSP-1451 Contemporary Cuisine; HOSP-2500 Hospitality Cost Control; or concurrent enrollment, and HOSP-2700 Hospitality Purchasing.

HOSP-2350 Restaurant Operations

03 Semester Credits

Practical application of learned food preparation and presentation skills. Hands-on skill development within a simulated in-house restaurant kitchen with exposure to each kitchen position. Students prepare foods to order and for buffet presentation. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 00 hours. Laboratory 09 hours.

Prerequisite(s): HOSP-1451 Contemporary Cuisine.

HOSP-2360 Restaurant Marketing

02 Semester Credits

Course will focus on the role effective marketing and sales efforts play in the operation of a successful restaurant or foodservice outlet. Demographic and relevant market research will be conducted which will lead to the formulation of a marketing plan and budget.

Additionally, ethics and marketing, the product life cycle, pricing strategies, feasibility studies, and the role of return on investment (ROI) will also be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1360 Fundamentals of Restaurant/Foodservice Management.

HOSP-2370 Restaurant/Foodservice Entrepreneurship

03 Semester Credits

Capstone course in restaurant/foodservice management. Through new material and utilizing the components and skills developed in previous courses, students will develop an understanding of the necessary requirements to open and operate a successful restaurant/foodservice operation. Students will present an original concept, create a professional menu, and prepare appropriate financial documents. Costing, controls, legal concerns and purchasing will also be covered. Intended not just for entrepreneurs, the course takes the philosophy that the best managers know how to think like owners.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1360 Fundamentals of Restaurant/Foodservice Management; and HOSP-1680 Beverage Management; and HOSP-2360 Restaurant Marketing, or concurrent enrollment.

HOSP-2380 Hospitality Marketing and Sales

03 Semester Credits

Provides hospitality management students with solid background in principles of hospitality sales, advertising, and marketing. Textbook's main focus on strategies and sales techniques for selling to targeted market with emphasis on planned profits. Field trips may be required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry.

HOSP-2400 Hospitality Management and Supervision

03 Semester Credits

Analysis of hospitality operations through use of terminology, theories, and principle. Special emphasis on evolution of management thought, commitment to quality and productivity in various environments that affect practice of management and supervision. Through experiences and practical application, concepts will focus on standards and procedures for selection, training and

development of human resources in hospitality industry. Field trips may be required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, or departmental approval: admission to program, or related work experience.

HOSP-2480 Hospitality Law

03 Semester Credits

Provides awareness of rights and responsibilities that the law grants to or imposes upon hospitality operations, and illustrates possible consequences of failure to satisfy legal obligations. Discussion includes contracts, property-guest relationship, frauds, employment laws, anti-trust regulations, food and beverage sales, wage and hour standards, social security and income tax withholding requirements, tax/tip reporting, and immigration laws. Field trips may be required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry.

HOSP-2500 Hospitality Cost Control

03 Semester Credits

Addresses lodging, tourism, and food and beverage industries procedures to help control food, beverage, labor costs and sales income in food and beverage operations. Analysis of factors that serve as base for decision-making and improvement of operations that result in increased profits. Use of developing technology related to spreadsheets and other cost control aids. Field trips may be required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-2700 Hospitality Purchasing, or concurrent enrollment; or departmental approval: work experience or prior business courses in related subjects.

HOSP-2550 Baking Production and Sales II

03 Semester Credits

Building on theoretical and practical foundations of "Introduction to Baking and Pastries", students will develop advanced skills and knowledge in production and selection of quality handcrafted and purchased products. Scientific principles and experimental methods explored and additional emphasis placed on advanced decorating and finishing techniques, chocolate work, candies, sugar works, presentation methods, menu development and costing. Students required to do production for community events and contests. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): HOSP-1020 Sanitation and Safety, and HOSP-1552 Introduction to Baking & Pastries, or departmental approval: industry related experience.

HOSP-2560 Garde Manger

03 Semester Credits

Presentation of Garde Manger station, including tools and equipment, preparation of pâtés, terrines and galantines, hors d'oeuvres and canapes. Demonstrate basic skills in charcuterie, carving of edible and non-edible showpieces, garnishes, and aspics. Includes buffet and plate presentation. Experience at a community event or field trips may be required.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): HOSP-1451 Contemporary Cuisine.

HOSP-2580 Convention Management and Meeting Planning

02 Semester Credits

Defines scope and segmentation of convention and group business market, describes marketing and sales strategies to attract markets with specific needs, and explains techniques to meet those needs as part of meeting and convention planning and service. Field trips may be required. Industry experience at a community event or function may be required.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry or departmental approval: work experience.

HOSP-2651 Banquet Management & Production

04 Semester Credits

Capstone course in Culinary Art. Practice of management and supervisory skills in an in-house restaurant. Students work in management teams to create, plan, design, market, sell, train, and execute a dining event for a minimum of 50 guests. Students rotate through production and service stations, as well as management positions, with responsibility for production, cost control/accounting procedures and customer relations within the restaurant. Industry experience participating at a community event or function may be required.

Lecture 00 hours. Laboratory 09 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): HOSP-1940 Culinary Arts/Professional Baking Field Experience; HOSP-1650 Dining Room Operations; HOSP-2350 Restaurant Operations; HOSP-2500 Hospitality Cost Control; and HOSP-2400 Hospitality Management and Supervision or concurrent enrollment.

HOSP-2700 Hospitality Purchasing

02 Semester Credits

Principles for purchasing supplies, equipment, food and beverages, and contract services for hospitality industry. Government regulations, industry standards, product availability, economic concerns, supplier relationships, and marketplace. Practice applications of purchase orders, bidding, specifications, computer assisted ordering and inventory controls. Field trips may be required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1020 Sanitation and Safety, and HOSP-1031 Fundamentals of Culinary Arts.

HOSP-2750 Culinary Competition

02 Semester Credits

Refine and demonstrate culinary and organizational skills, and explore creative cooking talents while competing in an American Culinary Federation (ACF) sanctioned event. Mandatory ACF membership required for Culinary Competitions. Participation in College Community Service representing the Hospitality Department and the college as Culinary Ambassadors.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): HOSP-1031 Fundamentals of Culinary Arts, and HOSP-1451 Contemporary Cuisine, or concurrent enrollment.

HOSP-2861 Lodging and Tourism Management

Experience Practicum

04 Semester Credits

Capstone course in Lodging-Tourism Management. On-site observation and work experience in variety of job areas in Lodging or Tourism industry, with emphasis on practice of technical supervisory skills. Corresponding seminar presentation and discussion of current industry issues included. Student portfolios reviewed by industry professionals with emphasis on preparedness as career professional.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 2 hours per week

Prerequisite(s): HOSP-1960 Lodging/Tourism Field Experience, and HOSP-2400 Hospitality Management and Supervision or concurrent enrollment, and departmental approval: approved work site.

HOSP-2871 Food and Beverage Management Experience

02 Semester Credits

On-site observation and work experience in a variety of job areas in Food and Beverage areas of hospitality industry with emphasis on practice of supervisory skills. Special emphasis on evaluation of student accomplishments and preparedness to enter industry as career professional. Students will set goals for the field experience as well as attend required seminars, present their portfolio and create a professional personal resume.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 14 hours per week.

Seminar: 1 hour a week.

Prerequisite(s): HOSP-1950 Restaurant/Food Service Management Field Experience, HOSP-2400 Hospitality Management and Supervision or concurrent enrollment, and departmental approval: approved work site.

HOSP-2992 Culinary Evaluation & American Regional Cuisine

02 Semester Credits

Capstone course in Culinary Art. Practice preparation of classical and contemporary cuisine, including American Regional cuisine. Collaborate with visiting professional chefs to prepare various appetizers, soups, salads, entrees and desserts. Final evaluation by American Culinary Federation (ACF) professional chefs of practical exam, including menu and recipe development, costing, purchasing, organization of station, and preparation, cooking, and presentation of student menu. Professional chef evaluations are based on American Culinary Federation and current industry standards. Industry experience at a community event or function may be required.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): HOSP-2350 Restaurant Operations, and HOSP-2560 Garde Manger, and HOSP-1940 Culinary Arts/Professional Baking Field Experience.

HUMAN SERVICES - HS

HS-1100 Foundations of Substance Abuse and Addiction

03 Semester Credits

Introduction to psychological and medical complications of alcohol, tobacco, and other drugs (ATOD), with emphasis on short term and long term effects. Provide overview of history of ATOD, etiology of dependency, physiological, neuropsychological, psychological and social effects of chemical abuse on the body and relationships.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HS-1110 Crisis Intervention and Child Abuse Issues

03 Semester Credits

Introduction to crisis theory and intervention strategies utilized with individuals, groups and the community. Focus on range of human service populations and service issues. Introduction to understanding and responding to child abuse. Define criteria to evaluate physical, emotional, psychological and sexual abuse. Define criteria for evaluating sexual interactions of children. Identify sexual perpetrator behavior of children and develop intervention strategies. Includes prevention, early intervention, crisis intervention and recovery strategies.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HS-1120 Suicide Prevention & Intervention

02 Semester Credits

Covers suicide as a major social problem in America. Explore the social, psychological, and spiritual aspects of suicide and the differences between suicide death and

other deaths. Includes the high risk factors associated with suicide, including gender, age, culture, mental illness, physical illness, addictions, and other factors. Exploration of the assessment and intervention techniques and prevention measures to assist and manage suicide crisis. Also covers resources and services to assist the person at risk of suicide as well as the family members/survivors. Field trips may be required.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or departmental approval. Students may request a prerequisite override. This request will be done on a case by case basis.

HS-1200 Treatment Modalities and Diversity Issues in Chemical Dependency

04 Semester Credits

Introduction to current concepts, theoretical models and research used by practitioners to understand total ecology of the chemically dependent individual. Examination and explorations of psychological, social and cultural lifestyle aspects and chemical dependency as applied to multicultural and special populations. Examination of various methods of intervention, assessment, case management, referrals and community resources for practitioner to help people maintain sobriety. Special emphasis on the 12 Core Functions/Global Criteria. Identification of national accreditation criteria, documentation, certification requirements and examination preparation.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): HS-1100 Foundations of Substance Abuse and Addiction.

HS-1210 Prevention and Chemical Dependency

02 Semester Credits

Examine the three levels of prevention. Models and theories used in prevention strategies. Methods, strategies, legal aspects, social and community resources available to prevent chemical dependency and relapse. Discuss prevention certification skills and requirements. Emphasis on process outcomes, including quality assurance, evaluation and tracking.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): HS-1100 Foundations of Substance Abuse and Addiction.

HS-1220 Diagnostic Tools and Legal Considerations **04 Semester Credits**

Introduction to signs and symptoms of behaviors associated with mental illness, using DSM-IV. Identify and discuss psychotropic and related medications. Identification of criteria to qualify consumers for services. Discussion of networking strategies. Development of advocacy strategies based on integration of course material. Basic legal issues and policies affecting consumers of mental health and substance addiction services. Exploration of Ohio Revised Code statutes relating to probate, commitment, retention, release, due process, patient's rights, forensics, confidentiality and privacy act. Discussion of recent court decisions pertaining to mental health and substance addiction.
Lecture 04 hours. Laboratory 00 hours.
Prerequisite(s): None.

HS-1300 Introduction to Human Services **03 Semester Credits**

Survey of historical and philosophical developments and their effects on Human Services. Introduction to contemporary Human Services delivery systems. Development of client-centered Human Services interventions. Emphasis on understanding Human Services within context of culturally/ethnically diverse urban environment.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HS-1400 Group Work in the Human Services **02 Semester Credits**

Introduction to group work. Investigation of group work theories, different types of groups, group dynamics, stages of group process, group facilitation, participant role/influences, and group counseling techniques. Cooperative learning and role playing incorporated into learning experience.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): Concurrent enrollment in HS-1850 Introduction to Human Services Principles and Practices, or departmental approval: assessment by program coordinator.

HS-1850 Introduction to Human Services Principles and Practices **05 Semester Credits**

Principles and practices of Solution Focuses/Brief Therapy Theory. Development of behavioral observation, assessment and assertiveness skills. Emphasis on developing cooperative relationships with clients and practicum supervisor. Introduction to community support process and managed care system. Demonstration of ethical and culturally sensitive interventions at practicum site. Supervised practicum of seven hours per week with emphasis on orientation, data collection, documentation, interpretation of behavior, and decision making relating to

individuals and social systems.
Lecture 03 hours. Laboratory 00 hours.
Other Required Hours: Practicum: 7 hours per week.
Seminar: 1 hour per week.
Prerequisite(s): HS-1300 Introduction to Human Services, or departmental approval: equivalent coursework.

HS-2200 Ethics in Chemical Dependency **03 Semester Credits**

Examination of ethical considerations in field of Chemical Dependency. Emphasis on ethical considerations surrounding the 12 Core Functions. Examine confidentiality compliance requirements for practitioner and organizations, including HIPPA. Identify scope of practice skills and limitations. Explore personal inventory of one's skills, knowledge and boundary issues. Identify strategies to prepare for state examination, including a mock test. Students will demonstrate assertiveness, advocacy and stress management techniques and skills.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): HS-1100 Foundations of Substance Abuse and Addiction.

HS-2210 Dual Diagnosis in Chemical Dependency **02 Semester Credits**

Signs and symptoms of behavior associated with mental illness and substance abuse/addiction. Assessment, models of treatment and case management issues. Agency organization, funding, assessment, and treatment with special populations.
Lecture 02 hours. Laboratory 00 hours.
Prerequisite(s): HS-1100 Foundations of Substance Abuse and Addiction, or departmental approval.

HS-2300 Family Theory and Services **04 Semester Credits**

Principles of family dynamics. Emphasis on family preservation. Introduction to various family theories, approaches and intervention strategies. Explore concepts related to intergenerational patterns of behavior and family traits. Introduction to signs and symptoms of behaviors associated with abuse, domestic violence and neglect. Development of assessment skills with emphasis on relationships, parenting, abuse and/or neglect. Introduction to basic legal issues, ethics, and reporting policies and procedures. Introduction to system and services of the local Department of Children and Family Services. Development of human service skills to service families. Explore range of services and resources available to families.
Lecture 04 hours. Laboratory 00 hours.
Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HS-2530 Proposal Writing and Program Development
02 Semester Credits

Fundamentals of proposal writing and program development. Students will develop a grant proposal that meets funding criteria. Note: It is strongly recommended that only second year students enroll in this course.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HS-2600 Systems Approach to Case Management
04 Semester Credits

Development of a systems approach to human service delivery, with emphasis on macro and micro systems. Explore formal and informal systems. Develop skills to evaluate existing human services in community. Identify role of an advocate. Development of assessment skills for individuals and families through use of Genogram and Ecological Mapping tools. Practice in development of skills in assessment, planning, coordination, intervention, maintenance, and referral as integral part of case management. Emphasis on oral and written communication pertaining to case management.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): HS-1850 Introduction to Human Services Principles and Practices.

HS-2850 Human Services Principles and Practices I
05 Semester Credits

Develop basic skills of time management. Application of time management skills to student's personal schedule. Investigation of therapeutic theories of laughter and playfulness. Research and practice in development of preventive measures in human services. Participation in practicum experience.

Lecture 02 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): HS-1850 Introduction to Human Services Principles and Practices; or departmental approval: equivalent coursework or experience.

HS-2860 Human Services Principles and Practices II
03 Semester Credits

Continuation of practicum experience. Focus on client within the existing service delivery system.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): HS-2850 Human Services Principles and Practices I.

HS-2990 Human Services Capstone Course
02 Semester Credits

Capstone course in Human Services. Assessment of one's knowledge, experience and skills as human service worker. Preparation and presentation of qualifications through written resume and portfolio. Guidelines and

preparation for employment interview. Investigation into Human Services issues.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): HS-2850 Human Services Principles and Practices I.

HUMANITIES - HUM**HUM-1010 Introduction to Humanities****03 Semester Credits**

Examines creative enterprise in human cultures through the study of great works of art and literature. Lectures, performances, exhibits, and multi-media presentations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HUM-1020 The Individual in Society**03 Semester Credits**

Introduction to works of art, philosophies, and scientific views that portray, explain, and evaluate positions and interactions of individuals in society. Lectures, performances, exhibits, and multi-media presentations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HUM-1030 The Individual in the Cosmos**03 Semester Credits**

Introduction to works of art, philosophies, religions, and scientific views that portray, explain, and evaluate individual's search for meaning in cosmos. Lectures, performances, exhibits, and multi-media presentations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

HUM-1100 Leadership Development Studies**03 Semester Credits**

Introduction to theories and ethics of group dynamics in leadership styles through study of classic and contemporary writings. Internationally recognized course, designed by Phi Theta Kappa. Lectures, discussions, and experiential learning exercises.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

HUM-175H Honors Forum: Critical Issues**03 Semester Credits**

Analysis of contemporary critical issues through their roots in past and present social, philosophical, and political attitudes and literature. Topics may vary with each offering, lecture, discussion, guest presentation, and multi-media presentation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, or department approval.

HUM-179H Honors Contract in Humanities

01 Semester Credit

Honors Contract complements and exceeds requirements and objectives for an existing HUM 1000-level honors course through formulation of a contract with a faculty mentor. In conjunction with faculty mentor, student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete contract, student is required to meet on a regularly scheduled basis with instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of six credits of different topics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level honors course in Humanities whose instructor approves the Honors Contract.

INFORMATION TECHNOLOGY - IT

IT-1000 Keyboarding

02 Semester Credits

Mastery of alphabetic and numeric keyboard using touch system. Formatting, speed and skill development, and keying basic business documents emphasized. Minimum goal of 30 words a minute with not more than five errors on a three-minute timed writing. Instruction on microcomputer.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

IT-1005 Computer Fundamentals

02 Semester Credits

Introduces students to general concepts of computer information systems. Presents terminology and effects of computers in our personal and business lives. Discusses available hardware and software as well as their applications. Includes repetitive hands-on applications in windows, keyboarding, electronic messaging, and word processing using a Windows environment. Introduces research techniques on the Internet and the World Wide Web. Exposes students to applications that promote critical thinking skills which are required to analyze and process information in future information technology courses.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

IT-1010 Introduction to Microcomputer Applications

03 Semester Credits

Overview and introduction to techniques and skills used on the microcomputer in a Windows environment. Introductory level instruction and hands-on training in file management, word processing, computerized spreadsheets, database management software, presentation graphics, electronic mail and Internet.

Practical applications in creating, editing, saving, and printing computer generated materials.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Recommend IT-1000 for students who have not previously taken a keyboarding/typing course.

OAN Approved: OBU003

IT-101H Honors Introduction to Microcomputer Applications

03 Semester Credits

Introduction to Microcomputer concepts and applications from a business problem perspective. Emphasis on business applications spanning multiple platforms and, including file management, communications, word processing, spreadsheets, database management, presentation software and the Internet. Course objectives will be met utilizing a variety of online resources in lieu of or in addition to a traditional text book.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Eligibility for ENG-101H Honors College Composition I, and eligibility for MATH-1270 Intermediate Algebra or higher.

IT-1025 Information Technology Concepts for Programmers

03 Semester Credits

Designed for students pursuing careers in programming, networking and general Information Technology fields. Introduces computer, networking, and programming concepts.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

IT-1030 Internet Fundamentals
02 Semester Credits

Instruction in use of the Internet and World Wide Web. Technical concepts and terminology including: effective browser use, hypermedia, addressing, effective search operations, file transfer, e-mail, chat, newsgroups copyright issues, library resources, citation styles, multimedia resources, security, basic networking concepts, basic HTML, e-commerce; web research, web page evaluation, privacy and ethical issues. Hands-on use of current software tools and techniques is emphasized.
Lecture 01 hour. Laboratory 02 hours.
Prerequisite(s): IT-1010 Introduction to Microcomputer Applications or concurrent enrollment.

IT-1040 Microcomputer Operating Systems
03 Semester Credits

Overview of microcomputer operating systems and their role in hardware, software and data management. Hands-on skill development in use of current microcomputer operating system.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers; or departmental approval: equivalent knowledge or skills.

IT-1050 Programming Logic
03 Semester Credits

Language-independent course introducing computer program design and development. Identification and solution of business problems emphasized. Structured flow charts, hierarchy charts and pseudocode used in program description and design.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): IT-1025 Information Technology Concepts for Programmers, or concurrent enrollment.

IT-1060 Introduction to Windows
02 Semester Credits

Basic study of graphical user interface using Windows operating system. Emphasis on windowing concepts and commands, running application programs, managing files and transferring data. Includes use of Windows help system, utilities, accessories and web browsers.
Lecture 01 hour. Laboratory 02 hours.
Prerequisite(s): None.

IT-1070 Advanced Internet Concepts
03 Semester Credits

Networking technologies that make up the Internet. Management of processes using the Internet, building Web sites utilizing HTML editor, and management of client personal computers connected to the Internet.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): IT-1030 Internet Fundamentals.

IT-1100 Fundamentals of iOS Application Development
03 Semester Credits

Introduction to the approach and technologies required for iOS (iPhone / iPad / iPod) application development. Technologies introduced will include: download and installation of software, Xcode, iPhone Simulator, Objective-C, Cocoa Touch, MVC and application marketing and distribution. Mac computer required with ability to download/install software.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): None.

IT-2100 iOS Application Programming
04 Semester Credits

Focuses of skills required to successfully create dynamic and efficient iOS applications. Covers the fundamentals of objects, classes and behaviors as well as object communication and, user interface design considerations. Mac computer required with ability to download/install software.
Lecture 03 hours. Laboratory 02 hours.
Prerequisite(s): IT-1050 Programming Logic, or concurrent enrollment IT-1100 Fundamentals of iOS Application Development, or concurrent enrollment.

IT-2110 Android Mobile App Development
03 Semester Credits

Introduction to mobile development using the Android Software Development Kit (SDK). Focuses on the skills required to design, develop and publish applications for the Android platform. Covers the fundamentals of Android application development including designing an application, implementing specific framework components such as a splash screen and main menu, how to handle user interaction and make an application available in the Android market.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): ITMP-2650 Java Programming, or concurrent enrollment.

IT-2250 Excel: VBA Programming
03 Semester Credits

Object-oriented programming course in Visual Basic for Applications (VBA). Investigation of the Excel object model as it relates to the creation of functions and procedures within VBA programming constructs. Strong emphasis on business applications.
Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): IT-1050 Programming Logic.

IT-2300 Database Use and Design**03 Semester Credits**

Study in electronic database concepts and software as used in a business environment. Database theory, design and implementation techniques. Problem solving strategies using database software for accurate and timely storage, retrieval and interpretation of data.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or departmental approval: equivalent experience.

IT-2351 Enterprise Database Systems**04 Semester Credits**

Apply knowledge of: relational algebra, data migration, data warehousing, data mining, distributed databases and security to design, develop and normalize a Structured Query Language (SQL) database to 3rd normal form using appropriate diagrams and database objects. Retrieve, insert, update, delete, troubleshoot and report data from complex SQL databases.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1025 Information Technology Concepts for Programmers, and eligibility for MATH-1270 Intermediate Algebra.

IT-2400 Unity Game Programming**03 Semester Credits**

An introduction to scripting with Unity focusing on the programming skills needed to translate game design principles into a fully-functional game.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VCIM-1400 Game Design II: Game Engines, or departmental approval.

IT-2600 E-Business Programming Technologies**03 Semester Credits**

Use of web programming technologies to create Internet client/server applications. Students learn to design, create, code and debug applications using Web objects. Topics include, but are not limited to, SQL, XML, C# .Net, Visual Basic .Net, CGI/Perl, Java, JavaServer Pages, PHP and ColdFusion.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1050 Programming Logic and ITWM-1010 Creating Web Pages with HTML and JavaScript.

IT-2700 Systems Analysis and Design**03 Semester Credits**

Overview of systems development life cycle. Utilize structured tools and object-oriented techniques to analyze and document process flow, data flows, data structures, file designs, input and output designs and program specifications in the systems development life cycle. Examine information gathering and reporting activities. Analyze strategies and techniques for producing logical methodologies which deal with complexity in development of information systems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): IT-1050 Programming Logic.

IT-2830 Cooperative Field Experience**01-03 Semester Credits**

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

**INFORMATION TECHNOLOGY -
(Networking Software) - ITNT****ITNT-2300 Networking Fundamentals****03 Semester Credits**

Survey course into the fundamental topics and concepts of networks and network technologies. Topics include introductory content on networking standards, models and protocols, networking hardware, transmission methods and media, LANs, WANs, Wireless, VOIP, security, and network management issues. Serves as a preparation basis for the CompTIA Network+ exam.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1240 Digital Circuits/Microprocessors I, or concurrent enrollment; or IT-1025 Information Technology Concepts for Programmers; or departmental approval.

ITNT-2310 TCP/IP**03 Semester Credits**

Provides knowledge and skills required to setup, configure, use, and support Transmission Control Protocol/Internet Protocol (TCP/IP). Emphasis on Microsoft Windows operating system. Discussions of TCP/IP in Novel and CISCO environments also included.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2300 Networking Fundamentals or concurrent enrollment, or departmental approval: equivalent knowledge or skills.

ITNT-2320 Network Administration I**03 Semester Credits**

Provides knowledge and skills necessary to perform post-installation and day-to-day administration tasks in single-domain or multiple-domain Microsoft Windows-based network. Includes creating and administering system policies, user and group accounts, setup and administering files, folders and printers, managing and monitoring network resources and troubleshooting. How to install and configure Windows, network transport protocols, network services, and client software also covered.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2300 Network Fundamentals or concurrent enrollment or departmental approval: equivalent knowledge or skills.

ITNT-2370 Network Security Fundamentals**03 Semester Credits**

A survey examination of network security fundamentals involved in creating and managing secure computer network environments. Both hardware and software topics are considered, including authentication methods, remote access, network security architectures and devices, cryptography, forensics and disaster recovery plans. Serves as preparation basis for CompTIA Security+ exam.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2310 TCP/IP, or EET-1302 Cisco I: Basic Networking Technologies, and EET-1312 Cisco II: Basic Routing and Switching.

ITNT-2380 Linux Administration**03 Semester Credits**

Linux is used as a platform for many server applications including the dominant Web server. Cost and licensing advantages have made it a network operating system that is in widespread use. The essentials of installing, configuring, maintaining, administering, and troubleshooting the Linux Operating System will be covered.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2300 Network Fundamentals or concurrent enrollment; or departmental approval: equivalent skills.

ITNT-2420 Network Administration II**03 Semester Credits**

Focuses on designing, implementing, and supporting Windows server network operating system in multiple-domain enterprise environment. Implementing directory services, analysis and optimization, and troubleshooting discussed.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2320 Network Administration I, or departmental approval: equivalent knowledge or skills.

ITNT-2990 Networking Capstone**03 Semester Credits**

Capstone course for Networking (Hardware and Software degree programs). Primary focus on developing and responding to request for proposals, and determining and presenting solutions to various networking environments. Uses case studies and teamwork.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): To be taken within the last 15 credits of the IT (Networking Software) or the EET (Networking Hardware) degree programs, or departmental approval.

**INFORMATION TECHNOLOGY -
(Programming and Development) -
ITMP/ITWM****ITWM-1010 Creating Web Pages with HTML and JavaScript****03 Semester Credits**

Introduction to Internet-based networking technologies. Overview of protocols, web servers and browser programs utilized in the display of the World Wide Web pages. Students build pages in XHTML (extensible hyper text markup language) and external style sheets in CSS (cascading style sheets) using an HTML editor, develop foundations in website design best practices, build introductory skills in JavaScript, and understand accessibility as it relates to website design.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1025 Information Technology Concepts for Programmers or concurrent enrollment.

ITWM-2030 Active Server Pages**04 Semester Credits**

Instruction in Active Server Page (ASP) technology for developing interactive, data-driven Web applications. Covers converting databases from Access to SQL Server and working with arrays, collections, and control structures.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ITWM-1010 Creating Web Pages with HTML and JavaScript, and ITWM-2320 Interactive Internet Programming; or departmental approval.

ITWM-2320 Interactive Internet Programming

04 Semester Credits

Introduction to interactive object-oriented programming in an Internet environment from a conceptual approach.

Emphasis is on understanding the basic Internet technologies (mostly from the client side), how and when to use them and how to integrate them into a system.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1050 Programming Logic, and ITWM-1010 Creating Web Pages with HTML and JavaScript.

ITMP-2620 Visual Basic Programming

04 Semester Credits

Introduction to object-oriented programming in windows environment using Visual Basic programming language. Emphasis on program development and design, application of logic in both user-defined and event-driven procedures, debugging techniques, and basics of Visual Basic syntax.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1050 Programming Logic, or departmental approval: equivalent knowledge or skills.

ITMP-2650 Java Programming

04 Semester Credits

Introduction to object-oriented programming in windows environment using the Java programming language.

Students will learn how to design, code and debug Java applications and applets. Other topics will include GUI components, event handling, and exception handling.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1050 Programming Logic, or departmental approval: equivalent experience or skills.

ITMP-2660 Data Structures & Algorithms

04 Semester Credits

Programming and problem-solving skills are further developed by using language features to implement various data structures such as stacks, queues, linked lists, trees and graphs. Additional topics include recursion, sorting, searching, and hashing algorithms.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ITMP-2650 Java Programming, or departmental approval: equivalent knowledge or skills.

ITMP-2670 C/C++ Programming Language

04 Semester Credits

Introduction to programming using the C and C++ programming languages, emphasizing program development and design, debugging techniques, and common basics of the C/C++ languages. Topics include data types, control statements, functions, argument passing, arrays, strings, structures, data files, and classes.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1050 Programming Logic, or departmental approval: equivalent knowledge or skills.

INTEGRATED SYSTEMS ENGINEERING TECHNOLOGY - ISET

ISET-1100 Welding Blue Print Reading

02 Semester Credits

Explore the techniques of blueprint reading and welding symbols relating to the welding field, including the proper way to read and apply measurements and dimensioning pertaining to industrial blueprints and metal specifications. Includes how to understand and interpret views and translate measurements and dimensions.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-0950 Beginning Algebra I.

ISET-1300 Mechanical/Electrical Print Reading

02 Semester Credits

Introduction to fundamental theory and application of blueprint reading skills. Included material will cover electrical, mechanical, structural drawings with symbols and wiring diagrams, safety codes, and basic troubleshooting techniques. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

ISET-1310 Mechanical Power Transmission

02 Semester Credits

Introduction to basic concepts of industrial maintenance and installation of mechanical drive systems including bearing, shafts, gears, and couplings. With an emphasis on OSHA safety standards, installation, maintenance, troubleshooting, and lubrication of mechanical components.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

ISET-1320 Fundamentals of Fluid Power

02 Semester Credits

Principles of power transmission are presented and contrasted with other means of transmission. Includes laws and principles of fluid power transmission, units of pressure and flow, plumbing materials and sizing, pressure losses through piping, and the uses of vacuum and vacuum applications. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ISET-1300 Mechanical/Electrical Print Reading.

ISET-1340 Industrial Piping and Tubing**02 Semester Credits**

Concepts and principles specific to piping, pipefitting, and tubing techniques, materials, routing and layout including types of material, cutting, threading, measurements, fittings, bending and offsets. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ISET-1300 Mechanical/Electrical Print Reading.

ISET-1410 Applied Electricity I**03 Semester Credits**

Fundamentals of electricity with emphasis on resistance, direct current voltage and current, electrical quantities and units of measurements. Ohm's Law, Kirchhoff's voltage and current laws will also be covered.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-1300 Mechanical/Electrical Print Reading or concurrent enrollment; or departmental approval.

ISET-1420 Applied Electricity II**03 Semester Credits**

Principles and applications of electricity with emphasis on alternating current, inductors, capacitors, and phase relationships. Electrical quantities and units of measurements, Ohm's Law, Kirchhoff's voltage and current laws, single and three phase transformers will also be included. Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-1410 Applied Electricity I, or departmental approval. Highly recommend students complete MATH-1280 Advanced Intermediate Algebra prior to enrolling in this course.

ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I**02 Semester Credits**

Fundamental concepts and principles of heating, ventilating, and air conditioning and refrigeration (HVAC/R) systems. Topics include types and components of HVAC/R systems, fuels and refrigerants, controls devices, thermostats and sensing devices. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

ISET-1460 Fundamental Boiler Technology**03 Semester Credits**

Concepts and fundamental skills associated with the operation and maintenance of steam boilers. Topics include an overview of steam boilers and boiler operation, basic boiler processes, boiler construction and material properties, boiler operating and maintenance procedures, combustion theory and fuels, efficiency, and codes and standards. Safety codes and procedures, preventive maintenance and basic troubleshooting techniques will

also be covered. Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

ISET-2100 Gas Metal Arc Welding (MIG)**04 Semester Credits**

Develop skills in Gas Metal Arc Welding (MIG). Extensive guided instruction provided and prepares a student for the certified MIG certification test.

Lecture 02 hours. Laboratory 04 hours.

Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.

ISET-2110 Gas Tungsten Arc Welding (TIG)**04 Semester Credits**

Develop skills in Gas Tungsten Arc Welding (GTAW-TIG). Extensive guided instruction provided and prepares a student for the certified TIG certification test.

Lecture 02 hours. Laboratory 04 hours.

Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.

ISET-2120 Shielded Metal Arc Welding (STIG)**04 Semester Credits**

Develop skills in Shielded Metal Welding (STIG). Extensive guided instruction provided and prepares a student for the certified STIG certification test.

Lecture 02 hours. Laboratory 04 hours.

Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.

ISET-2130 OxyFuel Gas Welding**04 Semester Credits**

Develop skills in OxyFuel Gas Welding. Extensive guided instruction provided and prepares a student for the certified OxyFuel Gas Welding certification test.

Lecture 02 hours. Laboratory 04 hours.

Prerequisite(s): ISET-1100 Welding Blue Print Reading or departmental approval.

ISET-2200 Industrial Motor Controls**03 Semester Credits**

Instruction in theory, application, and use of industrial type motors focusing on topics of safety, direct current (DC) motors, alternating current (AC) motors, single-phase motors, three-phase motors, motor troubleshooting methods, and motor starting. Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-1420 Applied Electricity II, or EET-1210 AC Electric Circuits, or departmental approval.

ISET-2210 Commercial Wiring

03 Semester Credits

Principles of commercial electrical installations to prepare for work in the electrical field in a commercial, environmental setting. Based on the National Electric Code, study includes job specifications, sizing and selection of materials, and installation techniques.

Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-2240 Applied National Electric Code or concurrent enrollment; or departmental approval.

ISET-2220 Fundamentals of Electronics and Instrumentation

03 Semester Credits

Concepts of electronics circuitry and instruments including purpose, function, and operation of diodes, transistors, Silicon Controlled Rectifier's (SCR's), DIAC's, TRIAC's, Field Effect Transmitter's (FET's), and other solid state devices used in live dynamic electronic circuits.

Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-1420 Applied Electricity II, ISET-2200 Industrial Motor Controls; and departmental approval.

ISET-2240 Applied National Electric Code

03 Semester Credits

Introduction to the National Electric Code including industry safety hazards, standards, and precautions. Code book structure, terminology, and electrical installations will be presented. Extensive guided instruction and practice provided.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ISET-1420 Applied Electricity II.

ISET-2450 Heating Ventilation Air Conditioning/Refrigeration II

02 Semester Credits

Topics include refrigeration, heat transfer and thermodynamics HVAC/R. Course covers modern HVAC/R systems including their major components, controls, different duct work designs, combustion, and HVAC/R blueprint reading. Install heating and air conditioning, start up and troubleshoot equipment, live demonstrations on heating and air conditioning systems, and preparation for the HVAC test. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I, or departmental approval.

ISET-2460 Applied Boiler Technology

02 Semester Credits

The focus of this course will be applications of steam and hot water boilers, water chillers, steam and hydronic heating and cooling systems. This course is the prerequisite for the State of Ohio Low Pressure Operators

License Exam Preparatory. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ISET-1460 Fundamental Boiler Technology, or departmental approval.

ISET-2500 Programmable Logic Controllers Maintenance I

03 Semester Credits

Fundamental concepts of Programmable Logic Controllers (PLCs) Maintenance including applications of industrial type PLCs requiring motion control, automated manufacturing and the functions PLCs serve in that environment. Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-2200 Industrial Motor Controls, and departmental approval.

ISET-2510 Programmable Logic Controllers Maintenance II

02 Semester Credits

Programming and application of Programmable Logic Controllers (PLCs) including timers, counters, program control, data manipulation, and math instructions.

Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ISET-2500 Programmable Logic Controllers Maintenance I, or departmental approval.

ISET-2520 Programmable Logic Controllers Maintenance III

02 Semester Credits

Programming and application of programmable logic controllers (PLCs) including sequencers, shift registers, PLC installation, editing, troubleshooting, process control, data acquisition, and computer-controlled machines and processes. Extensive guided instruction and practice provided.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): ISET-2510 Programmable Logic Controllers Maintenance II or concurrent enrollment; or departmental approval.

ISET-2990 Reliability Centered Maintenance

03 Semester Credits

Advanced concepts and principles of troubleshooting, preventive and predictive maintenance, reliability centered maintenance (RCM), elements of root cause failure analysis (RCFA), and Total Productive Maintenance (TPM). Extensive guided instruction and practice provided.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ISET-1450 Heating Ventilation Air Conditioning/Refrigeration I, and ISET-2500 Programmable Logic Controllers Maintenance I, and ISET-2210 Commercial Wiring, or departmental approval.

INTERIOR DESIGN - INTD

INTD-1100 Hand Drafting and Sketching for Interiors 02 Semester Credits

Introduction to hand drafting and field sketching for interior design. Emphasizes an understanding of basic construction and field terminology, use of field equipment, and understanding and interpreting construction documents. Provides a foundation in using hand drafting tools and translating field sketches to working drawings.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design, or concurrent enrollment and eligibility for MATH-0950 Beginning Algebra I.

INTD-1111 Introduction to Interior Design 03 Semester Credits

Introduction to interior design studies with emphasis on identifying and developing basic skills and competencies required for residential and nonresidential design. Provides the foundation for understanding terminology, principles and practices utilized in subsequent interior design coursework.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; and IT-1010 Introduction to Microcomputer Applications, or concurrent enrollment.

INTD-1120 Architectural Drafting for Interiors I 03 Semester Credits

Introduction to two dimensional computer-aided drafting(CAD). Learn and apply basic and intermediate CAD commands to draw, edit and plot drawings of architectural exteriors, interiors, elevations, sections, and details for the purpose of design, documentation and presentation.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, INTD-1100 Hand Drafting and Sketching for Interiors, INTD-1111 Introduction to Interior Design, MATH-1xxx 1000-level math course or higher, or concurrent enrollment; or departmental approval.

INTD-1130 Architectural Drafting for Interiors II 03 Semester Credits

Introduction to REVIT and building information modeling for commercial structures. Learn and apply basic REVIT commands to develop, plans, sections, exterior and interior elevations, details and perspectives for the purpose of design, documentation and presentation. Advanced computer-aided drafting (CAD) utilized to complete millwork drawings.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): INTD-1120 Architectural Drafting for Interiors I, or departmental approval.

INTD-1300 Color and Light in Interiors 03 Semester Credits

Introduction of color theory and light for interior spaces. Emphasis on color selection for the interior environment, color psychology, color trends and forecasting and how light affects color and design elements in spaces.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design.

INTD-1330 Coordinating Spaces 03 Semester Credits

Introduction to coordinating spaces by developing and enhancing an interior environment through furniture, fabrics and accessories. Emphasis on identifying and developing skills required to form spatial sequences as well as the use of interior elements in decorating.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): INTD-1300 Color and Light in Interiors, INTD-2330 Interior Design Materials and Sources, and INTD-2320 History of Interiors, or concurrent enrollment.

INTD-1350 Business of Interiors 03 Semester Credits

Introduction to business practices used in decorating interior spaces. Emphasis on professional ethics and business conduct, building professional relationships, effective communications with clients and industry professionals. Provides a foundation in design sales procedures and protocols.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): INTD-2330 Interior Design Materials and Sources.

INTD-1400 Interior Decorating Field Experience 01 Semester Credits

Field Experience in Interior Decorating. Students placed in practical work environments under college supervision. Interaction with professionals in the field and application of skill and knowledge gained in the classroom required.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 14 hours per week; 210 hours per semester at assigned site.

Prerequisite(s): INTD-2320 History of Interiors, or concurrent enrollment, INTD-1300 Color and Light in Interiors, INTD-1330 Coordinating Spaces, or concurrent enrollment and INTD-1350 Business of Interiors, or concurrent enrollment.

INTD-2300 Interior Design Studio I **03 Semester Credits**

First in two-course sequence. Introduction of functional space planning through design of residential projects. Emphasis on problem solving and exploring multiple design solutions for kitchen and bath design. Addresses accessibility design and guidelines according to the Americans with Disabilities Act (ADA).

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): ART-1050 Drawing I, ART-1091 Color Theory and Application, INTD-1111 Introduction to Interior Design, INTD-1120 Architectural Drafting for Interiors I, INTD-1130 Architectural Drafting for Interiors II, INTD-2350 Textiles or concurrent enrollment, INTD-2380 Fundamentals of Lighting, INTD-2430 Architectural Materials and Methods, VC&D-1015 Digital Studio Basics or concurrent enrollment; or departmental approval.

INTD-2320 History of Interiors **03 Semester Credits**

History of development of furnishings, ornaments, interiors and architectural details from Egyptian through prominent 20th century movements to present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ART-2020 Art History Survey: Prehistoric to Renaissance and ART-2030 Art History Survey: Late Renaissance to Present.

INTD-2330 Interior Design Materials and Sources **03 Semester Credits**

Review various interior finishes and materials through lectures, field trips, projects, and research assignments. Information presented on material and finish sources and showrooms. Criteria for specifying materials and finishes of interior spaces using Construction Specifications Institute (CSI) MasterFormat specifications.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design and INTD-1100 Hand Drafting and Sketching for Interiors.

INTD-2350 Textiles **03 Semester Credits**

Advanced study of textile aesthetics, application, and function in interior environments with an emphasis on natural and manufactured fibers and their physical properties and performance. Lectures and field trips cover fabric construction and fabrication, estimating and specifications of carpet, upholstery and window treatments and drapery.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design and MATH-1xxx 1000-level math course or higher, or departmental approval.

INTD-2380 Fundamentals of Lighting **03 Semester Credits**

Principles and techniques of lighting design and application in interior space. Light measurement, sources,

specifications, color and light, and proper terminology used to create an interior environment.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design and INTD-1120 Architectural Drafting for Interiors I.

INTD-2400 Interior Design Studio II **03 Semester Credits**

Second in two-course sequence. Introduction to the functional design of commercial interiors with an emphasis on evidence-based design and research, analysis of existing structures, building constraints, accessibility, regulations and guidelines.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): INTD-2300 Interior Design Studio I, and concurrent enrollment in INTD-2460 Interior Design Presentation.

INTD-2430 Architectural Materials and Methods **03 Semester Credits**

Emphasizes the study of building construction, environmental systems and controls, building systems, and fire and life safety codes, standards, and guidelines through field trips and research. Application of construction and building systems knowledge to functional solutions for interior environments.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): INTD-1120 Architectural Drafting for Interiors I and INTD-2330 Interior Design Materials and Sources.

INTD-2460 Interior Design Presentation **03 Semester Credits**

Verbal and visual communication methods for interior designers. Focuses on perspective construction, hand and electronic rendering techniques, sketching techniques, presentation methods and digital and web design portfolio construction.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): Concurrent enrollment in INTD-2400 Interior Design Studio II, and VC&D-1015 Digital Studio Basics.

INTD-2470 Professional Practice of Interior Design **03 Semester Credits**

Business practices for production of residential and commercial interior design projects within a global context. Emphasis on professional ethics and building professional relationships. Operation, communications, and legal responsibilities along with resumes, interviews, and business conduct presented. Preparation for INTD-2851 Interior Design Field Experience.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design and ENG-1010 College Composition I.

INTD-2851 Interior Design Field Experience

01 Semester Credits

Capstone course in Interior Design. Students placed in practical work environment under College supervision. Interaction with professionals in the field and application of skills and knowledge gained in the classroom required. *Lecture 00 hour. Laboratory 00 hours.*

Other Required Hours: Field Experience: 14 hours per week; 210 hours per semester at assigned site.

Prerequisite(s): INTD-2330 Interior Design Materials and Sources, INTD-2400 Interior Design Studio II, or concurrent enrollment, INTD-2430 Architectural Materials and Methods, INTD-2460 Interior Design Presentation, or concurrent enrollment, and INTD-2470 Professional Practice of Interior Design, and departmental approval.

ITALIAN - ITAL

ITAL-1010 Beginning Italian I

04 Semester Credits

Introduction to Italian through multiple approaches with emphasizing speaking and understanding. Practice in conversational Italian and aural comprehension on topics of daily interest. Practice in writing basic sentences and small simple paragraphs on relevant topics and reading short paragraphs.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

ITAL-1020 Beginning Italian II

04 Semester Credits

Development of proficiency in speaking, understanding, reading, and writing in Italian. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ITAL-1010 Beginning Italian I, or one year of high school Italian; or departmental approval.

ITAL-2010 Intermediate Italian I

03 Semester Credits

Increased vocabulary development and structural review through readings of cultural texts. Emphasis on oral expression and group discussions. Intensive exercises in written and oral expression. Grammar review and vocabulary building.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ITAL-1020 Beginning Italian II, or two years of high school Italian; or departmental approval.

ITAL-2020 Intermediate Italian II

03 Semester Credits

Intensive exercises in written and oral expression in Italian with emphasis on conversation. Further improvement of written skills. Reading of selected texts in order to deepen the understanding and appreciation of Italian culture.

Additional grammar review and vocabulary building.

Further exploration of Italian literature.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ITAL-2010 Intermediate Italian I, or two years of high school Italian; or departmental approval.

ITAL-2410 Italian Conversation and Composition

03 Semester Credits

Development of proficiency in speaking, understanding, reading, and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics and more conversational opportunities. Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Practice in writing compositions. Emphasis on group discussion.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ITAL-2020 Intermediate Italian II, or concurrent enrollment with departmental approval: three years of high school Italian.

ITAL-2420 Italian Civilization, Culture and Literature

03 Semester Credits

Introduction to the civilization and literature of Italy.

Emphasis on the interrelationship between history and geography of Italy and its culture.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ITAL-2410 Italian Conversation and Composition, or concurrent enrollment with departmental approval: three years of high school Italian.

JAPANESE - JAPN

JAPN-1011 Beginning Japanese Language and Culture I

04 Semester Credits

Introduction to modern Japanese. Listening, speaking, reading, writing, and basic grammatical structures, with emphasis on appropriate social use of the language within Japanese culture. Hiragana, katakana, and 75-100 kanji. Basics of kanji dictionaries. Presented through class interaction, audio, video, and computer lab instruction.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

**JAPN-1021 Beginning Japanese Language and Culture II
04 Semester Credits**

Continued study of modern Japanese in social and cultural context. Emphasis on listening comprehension and speaking regarding practical daily transactions. Reading basic, graded texts and writing simple compositions, integrating basic grammatical structures, hiragana, katakana, and 100-150 new kanji. Acquiring speed in referring to kanji dictionaries. Class interaction, audio, video and computer lab.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): JAPN-1011 Beginning Japanese Language and Culture I; or departmental approval.

JAPN-2011 Intermediate Japanese Language and Culture I

04 Semester Credits

Continued study of modern Japanese in social and cultural context. Listening and speaking skills necessary for basic function and communication in Japanese society. Reading functional, intermediate, graded texts and writing brief compositions and personal correspondence, integrating intermediate grammatical structures and 150-200 new kanji. Class interaction, audio, video, and computer lab.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): JAPN-1021 Beginning Japanese Language and Culture II, or departmental approval.

JAPN-2021 Intermediate Japanese Language and Culture II

04 Semester Credits

Continued study of modern Japanese in social and cultural context. Emphasis on communicative listening and speaking skills. Discussion of topics on Japanese culture and society. Reading and writing longer texts and compositions expressing more complex ideas, integrating 150-200 new kanji. Completion of Japanese grammar foundation. Class interaction, audio, video, and computer lab.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): JAPN-2011 Intermediate Japanese Language and Culture I, or departmental approval.

**JAPN-2411 Advanced Japanese Language and Culture I
03 Semester Credits**

Modern Japanese in social and cultural context. Development of focused listening comprehension and conversation skills. Discussion of cultural and business topics in Japanese. Reading selected literary texts. Introduction to formal writing style and its structural differences. Writing formal letters and brief essays. Introduction of 200-250 new kanji. Class interaction, audio, video, and computer lab.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): JAPN-2021 Intermediate Japanese Language and Culture II, or departmental approval.

**JAPN-2421 Advanced Japanese Language and Culture II
03 Semester Credits**

Modern Japanese in social and cultural context. Further development of focused listening and conversation skills. Discussion of aspects of Japanese politics and economy. Reading authentic texts such as periodicals, short stories, and novel excerpts. Writing journal entries and compositions of 200-400 characters. Introduction of 200-250 new kanji. Class interaction, audio, video, and computer lab.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): JAPN-2411 Advanced Japanese Language and Culture I, or departmental approval.

**JOURNALISM AND MASS
COMMUNICATION - JMC**

**JMC-1011 Introduction to Mass Communication
04 Semester Credits**

Nature and function of mass media: print, television, radio and film. Impact and influence on individuals in a democratic society.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-0990 Language Fundamentals II.

OAN Approved: OCM006

**JMC-1310 Film Appreciation
03 Semester Credits**

Introduction to aspects of film including script, directing and elements of cinematography. Includes survey of film history and criticism. Class views masterpieces from a number of countries.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

**JMC-1410 Staff Practice
01 Semester Credit**

Class laboratory experience in assembling, making-up and publishing College newspaper. Detailed weekly analysis of effectiveness of news stories written and published and overall presentation of the College newspaper. Students assigned to College newspaper staff.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): Concurrent enrollment in JMC-2010 News Writing, or departmental approval: comparable knowledge or skills.

JMC-1610 Survey of the Black Press**03 Semester Credits**

Nature and function of the Black press including broadcast, with emphasis on history and function of the Black press and impact of the Black press on minorities in general. Special attention on career opportunities for minorities and problems of the black journalist working with the general press.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

JMC-2000 Media Writing**03 Semester Credits**

Introduction to writing skills necessary for professional media such as news, print, broadcast, public relations and advertising. Emphasis also on the writing process, grammatical style sheets, audience concerns and an in-class, professional presentation of written materials.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1020 College Composition II, or ENG-102H Honors College Composition II.

JMC-2010 News Writing**04 Semester Credits**

News information gathering and writing for print media. An advanced look at structure of news stories and emphasis on writing against deadlines. Ethical, policy and legal questions confronting reporters, their newspapers and publishers. Completion of a professional portfolio of in-class clips. Survey of career opportunities in print, broadcast and internet journalism.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): JMC-2000 Media Writing, and ENG-1020 College Composition II, or ENG-102H Honors College Composition II.

JMC-2040 American Cinema**03 Semester Credits**

American film history from its beginnings to the present day. American film as an expression of American society and popular culture. Topics include: classical Hollywood cinema; the studio system; the star; genre studies of the western, comedy, musical, combat films, and film noir; Hollywood in the age of television; the film school generation; and into the 21st century.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

JMC-2220 Broadcast Journalism**03 Semester Credits**

News reading, news preparation, news reporting on audiotape, videotape and live camera for television and radio. Covers Federal Communications Commission rules and regulations on news. Fundamentals of what makes a story and how to get it. Art of interviewing. Field work,

study of radio and television history.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): JMC-1011 Introduction to Mass Communication.

JMC-2310 Screenwriting I**03 Semester Credits**

Provides an introduction to screenwriting for feature films.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ENG-1010 College Composition I; and JMC-1011 Introduction to Mass Communication, or JMC-1310 Film Appreciation, or departmental approval.

JMC-2410 Television Production**03 Semester Credits**

Introduction to basic concepts of video production. Emphasis on operation of video cameras, microphone placement, lighting, editing and post-production equipment. Teamwork and group production emphasized.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): JMC-1011 Introduction to Mass Communication, or departmental approval: comparable knowledge or skills.

JMC-2420 Advanced Television Production**03 Semester Credits**

Advanced television production and operations, to include hands-on training with studio and field equipment. Theories and processes of producing and directing video programs, including script writing, visualization, personnel management and budgeting. Includes multi-camera and single-camera production, video editing techniques. Teamwork and group production emphasized.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): JMC-2410 Television Production.

OAN Approved: OCM010

JMC-2830 Cooperative Field Experience**01-03 Semester Credits**

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

LAW ENFORCEMENT - LAWE

See Criminal Justice, page 305.

MARKETING - MARK

MARK-2010 Principles of Marketing

03 Semester Credits

Introduction to basic principles of marketing involved in selling of goods and services. Focus on the marketing mix which includes the creation of a product, pricing, channels of distribution, and promotion.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-1020 Introduction to Business, and ECON-2620 Principles of Microeconomics.

OAN Approved: OBU006

MARK-2020 Principles of Salesmanship

03 Semester Credits

Skill development in techniques used by successful professional sales persons. Sales management also addressed in context of self management and organizational management.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MARK-2010 Principles of Marketing, or concurrent enrollment in INTD-2300 Interior Design Studio I or departmental approval: comparable knowledge or skills.

MARK-2120 Import/Export Procedures and Documentation

03 Semester Credits

Procedures and documentation required for import and export activities. Includes shipment of goods and payment for foreign sales, rules for importing cargo into the U.S., and Customs regulations and processes.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MARK-2010 Principles of Marketing, or departmental approval: previous coursework and/or experience.

MARK-2260 Sales Promotion and Public Relations

03 Semester Credits

Study of promotion methods and techniques which are supplementary to advertising and personal selling. Focus on both consumer and trade promotions. Includes publicity and public relations, trade shows and exhibits, point-of-purchase displays, couponing, contests, sweepstakes, rebates and premiums.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MARK-2010 Principles of Marketing.

MARK-2270 Principles of Advertising

03 Semester Credits

Introduction to advertising as an element of the promotion mix in marketing. Focuses on strategic, quantitative, and

creative processes by which the advertising message is planned and produced.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MARK-2010 Principles of Marketing.

OAN Approved: OCM012

MARK-2500 Business-to-Business/Organizational Marketing

03 Semester Credits

Principles and practices involved in marketing of materials, equipment, supplies, and services to organizational markets, such as manufacturers, resellers, service providers, institutions, and the government. Focus on unique characteristics of organizational market and how to profitably sell in this market by developing proper marketing mix. Includes product management, pricing policies, channels of distribution, and promotional practices.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MARK-2010 Principles of Marketing.

MARK-2830 Cooperative Field Experience

01-03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 01-03 hour. Laboratory 00 hours.

Prerequisite(s): Formal application into the Cooperative Education Program.

MASSAGE THERAPY - MT

MT-1100 Introduction to Massotherapy

03 Semester Credits

Survey of massotherapy. Review of history of massage with emphasis on modern massage methodologies. Basic definitions of massage, movements, and modalities. Theories and principles of massage; basic physiological effects; indications and contraindications for massage. Scope of practice; code of ethics; boundary issues; credentialing and licensing; massage law and legislation are introduced. Basic chair massage techniques for the upper torso are introduced.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MT-1242 Somatic Studies I

03 Semester Credits

Study of human anatomy and physiology for students of massotherapy. Specific emphasis on fundamental concepts of human body, chemical level, cellular level, tissue, integumentary system, skeletal system and articulations.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I, or eligibility for MATH-1060 Survey of Mathematics; and ENG-0980 Language Fundamentals I, or eligibility for ENG-0990 Language Fundamentals I; or departmental approval.

MT-1272 Somatic Studies II

03 Semester Credits

Study of human anatomy and physiology for students of massotherapy. Specific emphasis on fundamental concepts of muscular system, nervous system, spinal cord, nerve plexus, brain, sensory and motor pathways, special senses, autonomic nervous system, endocrine, and cardiovascular system.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MT-1242 Somatic Studies I, or departmental approval.

MT-1280 Somatic Studies III

02 Semester Credits

Study of human anatomy and physiology for students of massotherapy and sport and exercise studies. Specific emphasis on fundamental concepts of circulatory system, lymphatic system, respiratory system, digestive system, metabolism, urinary system, acid-base balance and reproductive system.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): MT-1272 Somatic Studies II, or departmental approval.

MT-1302 Massage Therapy I

02 Semester Credits

History of massage with emphasis on modern massage methodologies. Examines theories and principles of massage, basic physiological effects, and indications and contraindications for massage. Scope of practice, code of ethics, boundary issues, credentialing and licensing, massage law and legislation discussed. Study and practice of both Kellogg and Fritz's techniques for manipulations of massage. Basic full-body massage, proper hygiene and sanitation practices, position and draping client, and proper body mechanics. Introduction to SOAP documentation.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I, or eligibility for ENG-0990 Language Fundamentals II; and MATH-0950 Beginning Algebra I, or eligibility for MATH-1060 Survey of Mathematics.

MT-1312 Applied Musculo-Skeletal Anatomy

03 Semester Credits

Extensive practice in learning to palpate all bony landmarks of trunk and extremities; muscle, ligament, and tendon palpation. Introduction to postural analysis with practice in taking and interpreting postural measurements.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I, or eligibility for ENG-0990 Language Fundamentals I; and MATH-0950 Beginning Algebra I, or eligibility for MATH-1060 Survey of Mathematics; or departmental approval.

MT-1321 Functional Assessment in Massage Therapy

02 Semester Credits

Recognizing and assessing common structural and postural deviations and common soft tissue injury to muscle, tendon, joint capsule, ligament, bursa, fascia and nerve in order to determine appropriateness of massage therapy.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, or departmental approval.

MT-1331 Massage Therapy II

03 Semester Credits

Documentation for massage therapy sessions through SOAP charting; interviewing and observational skills; in depth study of the physiological effects and therapeutic applications for each of the massage procedures and its respective subdivisions. Demonstrate massage procedures with patient in seated, side lying, prone and supine positions. Study of dysfunction resulting from poor body mechanics. Assessment and therapeutic treatment using Kellogg and Beck techniques and positional release. Introduction to theory and practice of trigger point and myofascial release therapy.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, and MT-1272 Somatic Studies II or concurrent enrollment; or departmental approval.

MT-1400 Overview and Assessment in Geriatric Massage Therapy

03 Semester Credits

Overview of major concepts that comprise the study of geriatric massage therapy. Includes demographic information and economic issues. Provides framework for understanding older adults and effects of massage. Application of geriatric assessment, cautions and contraindications and geriatric practice.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MT-1301 Massotherapy I, and MT-1320 Functional Assessment in Massage Therapy or concurrent enrollment; or departmental approval.

MT-2200 Medical Massage

02 Semester Credits

Introductory study and overview of theoretical and clinical massage in a medical setting. Demonstrate holistic team approach skills. Demonstrate holistic assessment, plan of care and delivery of massage and touch therapy to the frail and hospitalized patient.

Lecture 1.5 hours. Laboratory 1.5 hours.

Prerequisite(s): MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I, and MT-2360 Massage Therapy Clinic II or concurrent enrollment, and concurrent enrollment in MT-1280 Somatic Studies III.

MT-2301 Pathology for Massage Therapists

03 Semester Credits

Introduction to disease and basic mechanisms of disease for massage therapists. Diseases of skin, musculoskeletal system, nervous and endocrine systems. Other diseases to include cardiovascular, lymphatic, respiratory, digestive, urinary, reproductive, and immune systems. Role of stress in disease, mental, emotional and genetic.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MT-1242 Fundamentals of Somatic Studies I, or concurrent enrollment; or departmental approval.

MT-2311 Advanced Massage Therapy

03 Semester Credits

Assessment and treatment of musculoskeletal dysfunction based on trigger point therapy, myofascial release, and muscle energy approaches. Documentation of patient session and patient education.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MT-1280 Somatic Studies III, and MT-1321 Functional Assessment in Massage Therapy, and MT-2360 Massage Therapy Clinic II, and MT-2200 Medical Massage, and MT-2701 Comprehensive Somatic Studies for Massage Therapists, and MT-2991 Comprehensive Massage Therapy, or departmental approval.

MT-2350 Massage Therapy Clinic I

03 Semester Credits

Student clinical experience. Massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Completion of SOAP notes on each patient. Discussion and study of clinical ethics, boundaries, and chemical dependency issues that arise in massage therapy. Pharmacology for massage therapists. Hygiene and sanitation. Patient education.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II, or concurrent enrollment; or departmental approval.

MT-235A Massage Therapy Clinic I - A

02 Semester Credits

Student clinical experience. Massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Completion of SOAP notes on each patient. Discussion and study of clinical ethics, boundaries, and chemical dependency issues that arise in massage therapy. Pharmacology for massage therapists. Hygiene and sanitation. Patient education. Important: MT-235A and MT-235B together meet the requirement for completion of MT-2350 Massage Therapy Clinic I.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II, or concurrent enrollment; or departmental approval.

MT-235B Massage Therapy Clinic I - B

01 Semester Credits

Continuation of clinical experience begun in MT-235A. Students will continue the massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Completion of SOAP notes on each patient. Discussion and study of clinical ethics, boundaries, and chemical dependency issues that arise in massage therapy. Pharmacology for massage therapists. Hygiene and sanitation. Patient education. Important: MT-235A and 235B together meet the requirement for completion of MT-2350 Massage Therapy Clinic I.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): MT-1302 Massage Therapy I, and MT-1312 Applied Musculo-Skeletal Anatomy, and MT-1242 Somatic Studies I, and MT-1272 Somatic Studies II, or concurrent enrollment; and MT-235A Massage Therapy Clinic I - A, or departmental approval.

MT-2360 Massage Therapy Clinic II

03 Semester Credits

Continuation of student clinical experience. Massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and/or palpation skills. Demonstrate knowledge of pharmacology for massage therapists. Study of hydrotherapy. In depth study of massage business and law, including scope of practice.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I, and MT-1272 Somatic Studies II, and MT-1280 Somatic Studies III or concurrent enrollment, or departmental approval.

MT-236A Massage Therapy Clinic II -A

02 Semester Credits

Continuation of student clinical experience. Massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and palpation skills. Pharmacology for massage therapists. Study of hydrotherapy. In depth study of massage business and law, including scope of practice. Important: MT-236A and MT-236B together meet the requirement for completion of MT-2360 Massage Therapy Clinic II.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): MT-1272 Somatic Studies II, and MT-1280 Somatic Studies III or concurrent enrollment; and MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I; or MT-235A Massage Therapy Clinic I - A and MT-235B Massage Therapy Clinic I - B; or departmental approval.

MT-236B Massage Therapy Clinic II-B

01 Semester Credits

Continuation of student clinical experience begun in MT-236A. Students will continue the massage of patients, under supervision, integrating interviewing, observational and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and/or palpation skills. Pharmacology for massage therapists. Study of hydrotherapy. In depth study of massage business and law, including scope of practice. Important: MT-236A and MT-236B together meet the requirement for completion of MT-2360 Massage Therapy Clinic II.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): MT-1272 Somatic Studies II, and MT-1280 Somatic Studies III or concurrent enrollment; and MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I; or MT-235A Massage Therapy Clinic I - A and MT-235B Massage Therapy Clinic I - B; and MT-236A Massage Therapy Clinic II - A; or departmental approval.

MT-2370 Supplemental Massage Therapy Clinic

01 Semester Credits

Supplemental clinical experience begun in MT-2350, MT-2360, MT-235A, MT-235B, MT-236A, and MT-236B. Massage of patients, under supervision, integrating interviewing, observational, and massage therapy skills. Massage sequence will include demonstration of knowledge of physiological effects and therapeutic applications of massage procedures and appropriate assessment of anatomical structures utilizing specific massage procedures and palpation skills. Demonstrate

knowledge of pharmacology for massage therapists. Study of hydrotherapy. In-depth study of massage business and law, including scope of practice.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): MT-1331 Massage Therapy II, and MT-2301 Pathology for Massage Therapists, and MT-2350 Massage Therapy Clinic I, and MT-1272 Somatic Studies II, and MT-1280 Somatic Studies III, or departmental approval.

MT-2400 Geriatric Massage Techniques

03 Semester Credits

Study and practice of geriatric massage techniques including effleurage, petrissage, friction, tapotement vibration, rocking and shaking, skin rolling and ROM. Supplementary study and practice of geriatric massage to include effects of massage, anatomy and massage, muscles on the back, arm, gluteal muscles, muscles of the thigh and leg, and critical are as in the lower limb. Chronic conditions in the elderly. Includes basic geriatric massage techniques, evaluation process, preparing the treatment, and position problems.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MT-2301 Pathology for Massage Therapists or concurrent enrollment, and MT-2410 Health and Aging or concurrent enrollment.

MT-2410 Health and Aging

02 Semester Credits

Examination of the normal and expected age-related physiological changes. Emphasis on understanding normal structure and function of body systems, changes as part of aging, and typical abnormal pathological conditions commonly observed in older individuals. Focus on disease prevention and wellness. Survey of the theories and principles of geriatric massage in normal and abnormal aging.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MT-1400 Overview and Assessment in Geriatric Massage Therapy, and MT-2400 Geriatric Massage Techniques or concurrent enrollment.

MT-2701 Comprehensive Somatic Studies for Massage Therapists

01 Semester Credit

Quizzes and mock exam are given to prepare for State Medical Board of Ohio licensure exam. Comprehensive exam given at end of course must be passed to be recommended for State Medical Board of Ohio licensure exam. Comprehensive study to summarize human anatomy and physiology for students of massotherapy. Special emphasis on review of key concepts of human body - its introduction, six levels of organization and eleven systems of the body. Students develop in-depth knowledge of anatomy and physiology of human body. *Lecture 01 hour. Laboratory 00 hours.*

Prerequisite(s): Departmental approval: completion of all course work necessary to sit for the State Medical Board of Ohio licensure exam with a grade of "C" or higher, and recommendation of Massage Therapy Program Manager.

MT-2861 Geriatric Massage Practicum

03 Semester Credits

Massage of geriatric patients under supervision integrating interviewing, observational and massotherapy skills. Completion of SOAP notes on every patient seen. Seminar to include group discussion of lab work. *Lecture 00 hours. Laboratory 00 hours.*

*Other Required Hours: Practicum: 14 hours per week.
Seminar: 1 hour per week.*

Prerequisite(s): MT-2400 Geriatric Massage Techniques, and MT-2410 Health and Aging.

MT-2870 Advanced Massage Practicum

02 Semester Credits

Review and demonstrate competency in SOAP charting. Assessment and treatment of patients in the clinic. Treatment modalities include trigger point therapy, myofascial release, and muscle energy approaches. Basic introduction to complementary modalities including hot stone massage, meridian massage, and ayurvedic massage. *Lecture 00 hours. Laboratory 00 hours.*

*Other Required Hours: Practicum 8 hours/week.
Seminar 1 hour/week.*

Prerequisite(s): MT-2311 Advanced Massage Therapy, or concurrent enrollment; or departmental approval.

MT-2991 Comprehensive Massage Therapy

01 Semester Credit

Capstone course in Massage Therapy. Comprehensive review of massage techniques and theory with major focus on writings of Kellogg. Includes series of intensive training sessions to prepare students for the Ohio State Medical Board exam for licensure. Review of topics necessary to ensure success as professional L.M.T.'s. Student must pass comprehensive exam given at end of course in order to be recommended to sit for Ohio Medical Board exam for licensure and demonstrate minimally

accepted competency in performance of a therapeutic massage on a licensed massage therapist.

Lecture 01 hour. Laboratory 00 hours.

Departmental approval: completion of all course work necessary to sit for State Medical Board Licensure Exam, and recommendation of Massage Therapy Program Manager.

MATHEMATICS - MATH

MATH-0800 Developmental Special Topics in Mathematics

02 Semester Credits

Study of selected developmental topics or current issues in mathematics. Provides student opportunity to explore various topics in greater detail (see Credit Schedule of classes for current offerings). Repeatable for different topics. May not be applied toward elective and/or program graduation degree requirements.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

MATH-0850 Mastering Math 0950

02 Semester Credits

Information and methods for student success in developmental mathematics including: learning style preferences, role of memory process in learning mathematics, study skills for mathematics, overcoming math anxiety, goals in mathematics, self-motivation in mathematics, self-management in mathematics, self-esteem in mathematics, and self-evaluation of personal role in learning mathematics.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in MATH-0950 Beginning Algebra I.

MATH-0910 Basic Arithmetic and Pre-Algebra

03 Semester Credits

Review of basic arithmetic and introduction to algebraic concepts. Includes basic review of Real Numbers (whole numbers, integers, fractions and decimals) and their operations (addition, subtraction, multiplication and division) and the use of order of operations. Includes a basic review of ratio, proportion and percents. Includes applications and activities to build skills in estimation and problem solving.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Sufficient score on assessment test, or departmental approval.

MATH-0950 Beginning Algebra I

04 Semester Credits

First of two semester sequence. Includes order of operations, properties of real numbers, basic algebraic operations, linear equations, rectangular coordinate system, graphs of linear equations and linear systems. Includes applications and activities to build skills in problem solving.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-0960 Beginning Algebra II

04 Semester Credits

Second of two semester sequence. Includes simplification and operations on polynomials and exponents, extensive factoring and rational expressions in depth. Includes applications and activities to build skills in problem solving.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I or departmental approval: equivalent coursework.

MATH-0980 Intensified Beginning Algebra

05 Semester Credits

Intensive review of basic algebra. Topics include real numbers, algebraic operations and simplification of polynomials, factoring, linear equations, rectangular coordinate system, solution of linear equations, rational expressions, and exponents. Includes applications and activities to build skills in problem solving.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): Sufficient score on placement test; or departmental approval.

MATH-0990 Math Literacy for College Students

04 Semester Credits

Course integrates numeracy, proportional reasoning, algebraic reasoning, and functions. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of ways. Contexts include personal finance, medical literacy, and citizenship.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra or sufficient score on placement exam, or departmental approval.

MATH-1060 Survey of Mathematics

03 Semester Credits

Mathematics in problem solving. Problem solving using the scientific method, algebra, geometry, descriptive statistics, probability and calculator/computer applications.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I; or MATH-0980 Intensified Beginning Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1141 Applied Algebra and Mathematical Reasoning

03 Semester Credits

Applications and activities to build problem solving and mathematical modeling skills. Includes metric system, formula manipulation, graphs and their interpretation, solving algebraic equations and systems, functions, algebraic expressions (rational, radical and exponential), introduction to geometry, descriptive statistics and probability distributions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0960 Beginning Algebra II, or MATH-0980 Intensified Beginning Algebra, or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1190 Algebraic and Quantitative Reasoning

03 Semester Credits

Applications and appreciation of quantitative literacy. Interpreting information from real-world sources to solve problems using numerical, algebraic, and graphical knowledge. Various uses of mathematical models are explored, and statistical thinking is developed. Contexts include financial, environmental, social, and public and personal health.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I, or MATH-0980 Intensified Beginning Algebra, or MATH-0990 Math Literacy for College Students; or MATH-1270 Intermediate Algebra; or sufficient score on placement test; or departmental approval.

MATH-1250 Contemporary Mathematics

04 Semester Credits

Contemporary mathematics as it applies to today's world. Includes modeling and solving real life problems from behavioral, managerial, and social sciences. Topics include linear programming and management science, probability and statistics, biological and financial growth, and mathematics of social choice.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0960 Beginning Algebra II; or MATH-0980 Intensified Beginning Algebra, or sufficient score on assessment test; or departmental approval; equivalent coursework.

MATH-1270 Intermediate Algebra

04 Semester Credits

Builds on basic algebra concepts. Topics include linear and quadratic equations, radicals and rational exponents, rational equations, polynomial, rational, compound, and exponential and logarithmic functions and an introduction to functions and elementary transformations. This course is the prerequisite for Math 1370, 1410, and 1470 only.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0960 Beginning Algebra II; or MATH-0980 Intensified Beginning Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1275 Select Topics of Advanced Intermediate Algebra

01 Semester Credits

Supplemental content from Math 1280 Advanced Intermediate Algebra which was not covered in Math 1270 Intermediate Algebra. Intended for students who completed MATH 1270 but now need Math 1280. Topics include division of polynomials, absolute value equations and inequalities, complex numbers, conic sections, and systems of non-linear equations and inequalities.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): MATH-1270 Intermediate Algebra.

MATH-1280 Advanced Intermediate Algebra

05 Semester Credits

Builds on basic algebra concepts. Expanded topics include linear and quadratic equations, systems of linear and non-linear equations, radicals and rational exponents, and rational equations. Other topics included are polynomial, rational, compound, and absolute value inequalities, exponential and logarithmic functions. Introduction to complex numbers, functions, elementary transformations, and conic sections. Appropriate for students pursuing Science, Engineering, or Math majors.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0960 Beginning Algebra II or MATH-0980 Intensified Beginning Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1370 Mathematics for Elementary and Middle School Teachers I

04 Semester Credits

First of two semester sequence designed for elementary and middle school education majors. Emphasis on understanding ideas and concepts. Includes sets and numeration, whole numbers, number theory, fractions, decimals, integers, rational and real numbers, problem solving strategies, and historical topics. Highlights applications to classroom, projects, and use of current technology, including scientific/graphing calculators and computers.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1270 Intermediate Algebra, or MATH-1280 Advanced Intermediate Algebra sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1380 Mathematics for Elementary and Middle School Teachers II

04 Semester Credits

Second of two-semester sequence designed for elementary and middle school education majors. Emphasis on understanding ideas and concepts. Includes statistics, probability, measurement, geometric shapes, Euclidean geometry, coordinate geometry, transformational geometry, problem-solving strategies, and historical topics. Highlights applications to classroom, projects, and

use of current technology, including scientific/graphing calculators and computers.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1370 Mathematics for Elementary and Middle School Teachers I, or departmental approval: equivalent coursework.

MATH-1410 Elementary Probability and Statistics I

03 Semester Credits

First of a two semester introductory sequence in probability and statistics. Intended for students majoring in liberal arts, sciences, engineering, and education.

Includes study of descriptive statistics, relationships in bivariate data using scatter plots, two-way tables, correlation coefficients, and simple linear regression, elementary probability, probability distributions, normal distribution, binomial distribution, sampling concepts, sampling distribution of sample mean, estimation, and hypothesis testing.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1250 Contemporary Mathematics, or MATH-1270 Intermediate Algebra, or MATH-1280 Advanced Intermediate Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

OAN Approved: TMM010

MATH-1420 Elementary Probability and Statistics II

03 Semester Credits

Second of two-semester introductory sequence in probability and statistics. Intended for students majoring in liberal arts, sciences, engineering, and education.

Includes study of Chi-square distribution and F distribution and their applications, inferences on variances and proportions, comparing two means, categorical data, correlation, simple and multiple regression, analysis of variance, nonparametric tests and the use of statistical software packages.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1410 Elementary Probability and Statistics I, or departmental approval: equivalent coursework.

MATH-1470 Modern Mathematics for Business and Social Sciences I

04 Semester Credits

First of two-semester sequence. Includes linear systems, functions, matrix algebra and linear programming techniques as applied to business problems and the simplex method. Math of finance and basic theory of probability and statistics.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1270 Intermediate Algebra, or MATH-1280 Advanced Intermediate Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1480 Modern Mathematics for Business and Social Sciences II
04 Semester Credits

Second of two-semester sequence. Includes fundamentals of differential and integral calculus and the application of these topics to business and economics.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1470 Modern Mathematics for Business and Social Sciences I, or departmental approval: equivalent coursework.

UAN Approved: TMM013

MATH-1490 Business Probability and Statistics I
03 Semester Credits

First of two-semester introductory sequence in business probability and statistics. Intended for students majoring business. Application of statistical methods to business and economic problems. Topics include study of descriptive statistics, elementary probability, random variables and probability distributions, normal distribution, binomial distribution, sampling concepts, sampling distribution of sample mean, estimation, and hypothesis testing.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1470 Modern Mathematics for Business and Social Sciences I, or departmental approval: equivalent coursework.

UAN Approved: OBU009 (1 of 2 courses)

MATH-1500 Business Probability and Statistics II
03 Semester Credits

Second of two-semester introductory sequence in probability and statistics, intended for students majoring in business. Includes study of inferences on means and proportions, analysis of variance, correlation, simple and multiple linear regression models, business applications and decision making, and the use of statistical software.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1490 Business Probability and Statistics I, or departmental approval: equivalent coursework.

UAN Approved: OBU009 (2 of 2 courses)

MATH-1510 Trigonometry
03 Semester Credits

Topics include trigonometric functions and their values for all angles, vectors and oblique triangles, graphs of trigonometric functions, trigonometric identities and equations. Applications and activities to build skills in problem solving included.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

UAN Approved: TMM003

MATH-151H Honors Trigonometry
03 Semester Credits

Topics include trigonometric functions and their values for all angles, vectors and oblique triangles, graphs of

trigonometric functions, trigonometric identities and equations. Applications and activities to build skills in problem solving included. Emphasis on more challenging trigonometric concepts in real-world settings are found in the form of projects and in-class presentations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1521 College Algebra
04 Semester Credits

Includes polynomial, rational, exponential and logarithmic functions and graphs, conic sections, inequalities, matrices and determinants, theory of equations, series, sequences, the binomial theorem and mathematical induction. Study of applications and activities to build skills in problem solving.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

UAN Approved: TMM001

MATH-152H Honors College Algebra
04 Semester Credits

Includes polynomial, rational, exponential and logarithmic functions and graphs, conic sections, inequalities, matrices and determinants, theory of equations, series, sequences, the binomial theorem and mathematical induction. Study of applications and activities to build skills in problem solving. Emphasis on more challenging algebraic concepts in real-world settings through projects and in-class presentations.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1580 Precalculus
05 Semester Credits

Intensified course designed to prepare students for calculus. Study of real numbers, equations and inequalities, functions and graphs, sequences and series, theory of equations, systems of equations and inequalities, mathematical induction, conic sections, exponential and logarithmic functions, trigonometric functions, and complex numbers. Applications and activities to build skills in problem solving are also included.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): Sufficient score on assessment test; or departmental approval: previous trigonometry or algebra/trigonometry course in high school or college.

UAN Approved: OMT002

MATH-1610 Calculus I

05 Semester Credits

First of three semester sequence designed for math, science, and engineering majors. Includes study of Cartesian coordinates, functions and graphs, limits and continuity, differentiation of algebraic and trigonometric functions, applications of the derivative, differentials and antiderivatives, the definite integral and its applications.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1580 Precalculus; or MATH-1510 Trigonometry and MATH-1521 College Algebra; or sufficient score on assessment test; or departmental approval: equivalent coursework.

OAN Approved: TMM005

MATH-161H Honors Calculus I

05 Semester Credits

First of a three-semester sequence designed for math, science, business, and engineering majors. Focuses on conceptual understanding of verbal, numerical, visual, and algebraic representations of functions, their graphs, and operations. Includes limits, continuity, rates of change, derivatives, implicit differentiation of algebraic and trigonometric functions, application of differentials, differentiation, integrals, and application of integration. Emphasizes challenging calculus exercises, problems, projects, cooperative group work, student's presentation of one of the course projects, and use of technology: graphing calculators and computers.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1580 Precalculus; or MATH-1510 Trigonometry, and MATH-1521 College Algebra; or high school Precalculus; or departmental approval: equivalent coursework.

OAN Approved: TMM005

MATH-1620 Calculus II

05 Semester Credits

Second of three-semester sequence. Includes study of techniques of integration and their applications; L'Hôpital rule and indeterminate forms; mathematical modeling in differential equations; sequences and series; parametric and polar coordinates and curves, conics; conics sections.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1610 Calculus I, or departmental approval: equivalent coursework.

OAN Approved: TMM006

MATH-162H Honors Calculus II

05 Semester Credits

Second of three-semester sequence designed for mathematics, science, business, and engineering majors. Focuses on conceptual understanding of logarithmic and exponential functions, trigonometric and inverse trigonometric functions, and hyperbolic and inverse hyperbolic functions; develops their properties, characteristics, derivatives, and graphs. Includes techniques of integration, polar coordinates, conic sections, limits of indeterminate forms of quotients of functions,

improper integrals, and sequences and series. Emphasizes proofs of theorems and solving challenging examples, exercises, and application problems. Stresses development of research projects. Underscores cooperative work, student's presentation of one of the course projects, and use of technology: graphics calculators and computers.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): MATH-161H Honors Calculus I, or departmental approval: equivalent coursework.

MATH-2010 Introduction to Discrete Mathematics

04 Semester Credits

Foundation course in discrete mathematics with applications. Topics include logic, methods of proof, elementary number theory, set theory, functions, efficiency of algorithms, and mathematical induction.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1521 College Algebra; or MATH-1580 Precalculus; or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-2310 Calculus III

04 Semester Credits

Third of three-semester sequence. Topics include vectors, parametric equations, analytic geometry of space, partial differentiation, and multiple integrals, line and surface integrals.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1620 Calculus II; or departmental approval; equivalent coursework.

OAN Approved: TMM018 and OMT018

MATH-231H Honors Calculus III

04 Semester Credits

Third of three-semester sequence designed for mathematics, science, business, and engineering majors. Focuses on conceptual understanding of vectors, parametric equations, analytic geometry of space, partial differentiation, and multiple integrals, line and surface integrals. Emphasizes proofs of theorems and solving challenging examples, exercises, and application problems. Stresses development of research projects. Underscores cooperative work, student's presentation of one of the course projects; and use of technology: graphics calculators and computers.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-162H Honors Calculus II, or high school Honors Calculus II; or departmental approval: equivalent coursework.

MATH-2410 Introduction to Linear Algebra
03 Semester Credits

Includes the study of vector spaces, linear transformations and matrices, determinants, invariant subspaces, eigenvalues and eigenvectors and applications.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1620 Calculus II; or departmental approval: equivalent coursework.

OAN Approved: OMT019

MATH-2520 Differential Equations
03 Semester Credits

Includes study of differential equations of first and higher order, simultaneous, linear and homogenous differential equations, solution by power series, Laplace transformations and computer applications.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1620 Calculus II, or departmental approval: equivalent coursework.

OAN Approved: TMM020 and OMT020

**MECHANICAL ENGINEERING
TECHNOLOGY • MANUFACTURING
INDUSTRIAL ENGINEERING
TECHNOLOGY - MET**

MET-1100 Technology Orientation
02 Semester Credits

Orientation and exploration of technician's role as part of industrial team including technical careers, opportunities and job hunting skills. Topics include use of the computer, basic measurement and calculation skills and engineering drawing concepts. Introduction to oral, technical writing and graphic methods of communication. Introduction to professional organizations, journals and tools for professional enhancement to provide a path for lifelong learning.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Eligibility for MATH-1280 Intermediate Algebra or departmental approval.

OAN Approved: OES001

MET-1120 Computer Applications and Programming
02 Semester Credits

Design and debug windows-based application software in Microsoft Visual Basic and C Programming languages.

Apply designed software and spreadsheets in technological problem solving. Applying programming concepts to customize spreadsheets and chosen engineering specific application software.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-1280 Advanced Intermediate Algebra; or departmental approval: work experience.

MET-1230 Drawing & AutoCAD
03 Semester Credits

Apply visualization skills in the interpretation of orthographic projections and pictorial drawings. Applied geometry, use of scales, sections, and auxiliary views are studied. Dimensioning standards and conventions as applied to detail and assembly drawings in manual drafting as well as use of CAD system to accomplish drafting tasks are emphasized. Includes overviews of computer terms and functions of the Windows Operating System. Covers special terms and definitions used in computer-assisted drafting, the roles technical drawings play in production, manufacturing and products design process.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MATH-0950 beginning Algebra I or eligibility for MATH-1060 Survey of Mathematics.

MET-1240 Machine Tools and Manufacturing Processes
03 Semester Credits

Application of traditional and contemporary machine tools processes to accomplish the mechanical parts production or the maintenance and/or repairs of mechanical parts or equipment. Laboratory experiences include measuring and inspection, layout and fundamentals of machine tool setup and techniques for drilling, turning, milling and grinding. Manufacturing processes including the production of metals and alloys, polymers and plastics, forming, machining, fabrication, conditioning and finishing of metallic, plastic and composite engineering parts.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-1280 Intermediate Algebra, or departmental approval: work experience.

OAN Approved: OET010

MET-1250 Introduction To Additive Manufacturing
03 Semester Credits

Principles of the applications of Additive Manufacturing. Advantages of using Additive Manufacturing over traditional Subtractive Manufacturing processes are studied.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I or eligibility for MATH-1060 Survey of Mathematics.

MET-1260 Product Ideation and Design
03 Semester Credits

Provides knowledge of the theory of Rapid Prototyping, the enabling critical thinking in new product development, process building, sustainability, and innovation theories. Advantages of using Lean Manufacturing and (6) Sigma are studied.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0950 Beginning Algebra I or eligibility for MATH-1060 Survey of Mathematics..

MET-1300 Engineering Materials and Metallurgy

03 Semester Credits

Analysis of the behavior and characteristics of metals and other materials used in manufacturing including polymers, ceramics and composites: their structure, physical and mechanical properties. Examining and interpreting phase diagrams and crystallized microstructures of metals and alloys; heat treatment of ferrous and nonferrous metals; hardness, tensile and Charpy impact tests.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

OAN Approved: OET013

MET-1400 CNC Programming and Operation

03 Semester Credits

Emphasis on blueprint analysis, using math concepts to determine programming points; ascertaining implied part dimensions; calculation of speeds; feeds and tool offset; establishment of work zero and tools home positions. Manual programming of computer numerical control (CNC) machines using G-codes for FANUC controllers; tooling and set-up of CNC lathes and milling machines for machining operations; verification of tool paths by simulation; operating CNC machines to produce mechanical parts.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-1240 Machine Tools and Manufacturing Processes, or concurrent enrollment; or departmental approval: work experience.

MET-1601 Technical Statics

03 Semester Credits

Study of forces on structures and machines at rest. Topics include composition and resolution of forces, moments, freebody diagrams, trusses, frames, simple machines, friction, centers of gravity, centroids, and plane and polar moments of inertia.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra; and PHYS-1210 College Physics I, or PHYS-2310 General Physics I, or concurrent enrollment.

OAN Approved: OET007

MET-1621 Technical Dynamics

03 Semester Credits

Study of motion and forces on rigid members. Includes plane and curvilinear motion, kinetics, work, energy, power, efficiency, impact and momentum. Introduction to balancing and vibrations.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MET-1601 Technical Statics, or concurrent enrollment.

MET-2000 CAD/CAM Processes

03 Semester Credits

Using Mastercam and other Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM)

software to graphically model parts; graphic display manipulation; geometrical analysis; graphic and data files management; exchange and conversion of graphic files to formats readable by Mastercam or given CAD/CAM software; generating codes, post processing to G-codes interpretable by given computer numerical controller; verification and validation of tool-paths by graphical simulation; downloading path programs to machine; tooling and setting up parts on CNC lathe and milling machines; operating CNC machines to produce parts.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-1400 CNC Programming and Operation or concurrent enrollment.

MET-2041 CAD II & GD&T

03 Semester Credits

Advanced engineering drawing concepts used with computer-aided drafting software. Drawing applications include size tolerancing, geometric dimensioning, thread and fastener specifications, detail and assembly drawings, weldments, external references, bill of materials and standardized drawing formats. Introduction to solid modeling.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-1230 Drawing & AutoCAD, and MET-1120 Computer Applications and Programming, or departmental approval.

OAN Approved: OET012

MET-2140 Manufacturing Automation and Control

03 Semester Credits

Automation and control of manufacturing machines and their auxiliary equipment to enable manufacturing systems integration applying fundamental concepts of Programmable Logic Controllers (PLCs); basic programming and interface of robots to facilitate materials transfer in an integrated manufacturing environment

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-1120 Computer Applications and Programming.

MET-2150 3D Printing & Scanning for Reverse Engineering and Inspection

03 Semester Credits

Engineering parts inspection and reverse engineering processes employing 3D printing, scanning, and Coordinate Measuring (CMM technologies.) Emphasis on performing Laser Arm Scanning to generate images for conversion into 2D/3D drawings; using applicable software to produce 3D models or converting scanned images into 2D/3D models; using CMM for parts inspection and generating points cloud for 3D modeling; interfacing generated models with reverse engineering methods.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-2601 3D Solid Modeling, or concurrent enrollment.

MET-2190 Additive Manufacturing Project Based/Team Oriented Capstone

03 Semester Credits

Examines the key elements of product development from the concept through design to production. Application technologies learned in the Additive Manufacturing curricula to complete group projects involving product development and production.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: Must be taken in the last semester of the program.

MET-2200 Strength of Materials

03 Semester Credits

Study of stress, strain and deformation of mechanical bodies due to static tensile, compressive, torsional, bending and combined loading. Deflection of beams and columns, design of beam for strength and structural connections.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MET-1601 Technical Statics.

OAN Approved: OET008

MET-2220 Advanced CAD/CAM Processes

03 Semester Credits

Applying Mastercam for advanced CAD/CAM operations; creating wireframe, surface and solid models; generating, editing, verifying, and postprocessing codes interpretable by given CNC controllers, with emphasis on FANUC controller; downloading path programs to CNC machines; tooling and setting up parts; operating CNC machines to produce parts.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-1240 Machine Tools and Manufacturing Processes, MET-1400 CNC Programming and Operations, and MET-2000 CAD/CAM Processes.

MET-2240 Mechanical Engineering Lab

01 Semester Credits

Introduction to fundamental laboratory measurement techniques, data acquisition and analysis, and technical report writing in the form of engineering reports and executive summaries. Troubleshoot and correct hydraulic/electromechanical equipment and digital data acquisition hardware. Experiments are drawn from thermal sciences, dynamics, solid mechanics and materials science.

Lecture 00 hour. Laboratory 02 hours.

Prerequisite(s): MET-1601 Technical Statics.

MET-2300 Fluid Power

03 Semester Credits

Concepts and practices related to modern hydraulic and pneumatic systems. Includes basics of fluid flow, fluid dynamics, properties of hydraulic fluid, components of hydraulic system, hydraulic circuit, design, operation and control of hydraulic/pneumatic system.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): PHYS-1210 College Physics I or PHYS-2310 General Physics I, or concurrent enrollment; or students in Integrated Systems Engineering Technology program may fulfill prerequisite requirements with ISET-1320 Fundamentals of Fluid Power; or departmental approval.

OAN Approved: OET009

MET-2320 Thermal Dynamics

03 Semester Credits

Heat, work, kinetic theory of gases, equation of state, thermodynamics system, control volume, first and second laws of thermodynamics, reversible and irreversible processes, and introduction to basic thermodynamic cycles.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra and MET-1601 Technical Statics.

MET-2400 Statistical Quality Control

03 Semester Credits

Statistical quality control is the collection, analysis, and interpretation of data for use in quality control activities. Introduction to quality; fundamentals of probability and statistics; process capability; control chart applications; sampling systems; lot-by-lot acceptance sampling by attributes; reliability; quality control methods and tools; applications of computers and software to quality control.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra; and MET-1240 Machine Tools and Manufacturing Processes, or departmental approval: work experience.

MET-2421 Fundamentals of Engineering Economics

02 Semester Credits

Analysis of cost elements in manufacturing operations; comparison of manufacturing options; options selection applying Benefit/Cost Analysis; practical application of cost concepts and the analysis applicable to design, development, implementation of phases of manufacturing operations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-1280 Advanced Intermediate Algebra; or departmental approval: work experience.

OAN Approved: OES005

MET-2500 Fundamentals of Products Development and Manufacture

03 Semester Credits

Examines the key elements of product development from the concept through design to production. Students will apply such technologies and as pneumatics, robotics, computer numerical control (CNC), computer aided design (CAD), computer aided engineering (CAE), computer aided manufacturing (CAM), computer integrated manufacturing (CIM), quality control, precision measurement, automation and controls (PLC Programming), and principles of engineering economics to complete group projects involving products development and production. Ethical implications to workers and the community in design consideration are investigated.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra.

MET-2601 3D Solid Modeling

03 Semester Credits

Introduction to computer-aided engineering, design of mechanical component and system using computer-aided design technique, AutoCAD solid and surface model for product development, optimization of design and design documentation. Complete set of production drawings created using 3D drawing environments. Principles of parametric design, and functional assemblies directly applied. Emphasis tailored to 3D modeling for enhanced part description. Students work on individual design projects to stimulate spatial abilities and problem-solving techniques.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MET-1230 Drawing & AutoCAD.

MET-2700 Machine Design

04 Semester Credits

Capstone course in Mechanical Engineering Technology. Study of mechanical motion and design of machine elements. Includes displacement, velocity and acceleration in linkages, cams and power transmission devices. Design of machine elements include checking of assembled machines, fasteners, weldments, springs, bearings, belts, chains, shafts, clutches and brakes. Laboratory consists of using CAD, computer programming and manufacturer's catalogs, and professional journals to aid in design. Proper completion of the project depends on the team as a whole.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): MET-1621 Technical Dynamics, and MET-2041 CAD II & GD&T, or concurrent enrollment; and MET-2200 Strength of Materials.

MET-2730 Lean Manufacturing

03 Semester Credits

Application of lean manufacturing concepts and lean tools in structuring industrial manufacturing processes in efforts to minimize manufacturing costs, enhance

workplace safety, improve work flow, eliminate process variations, and to shorten products delivery time.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MET-1230 Drawing & AutoCAD, and MET-1120 Computer Applications and Programming, and MATH-1280 Advanced Intermediate Algebra or departmental approval.

MET-2740 Quality Manufacturing

03 Semester Credits

Practical application of quality principles to process improvement and reduction of variation. Application of statistical techniques and concepts used in quality control; acceptance sampling; quality cost; reliability; applications of computers, software to other quality control tools to quality improvement.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MET-2400 Statistical Quality Control, and MATH-1280 Advanced Intermediate Algebra.

MET-2830 Cooperative Field Experience

01-03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education Program.

MET-2940 Additive Manufacturing Internship

01 Semester Credits

Engage in actual hands-on, on-the-job training using Additive Manufacturing technology in Additive Manufacturing with 50% field experience and 50% seminar.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 7 hours per week for 15 weeks.

Prerequisite(s): MET-1230 Drawing & AutoCAD, and MET-1240 Machine Tools and Manufacturing Processes, and MET-1250 Introduction To Additive Manufacturing, and MET-1260 Product Ideation and Design; or departmental approval.

MEDIA ARTS AND STUDIES - MARS

MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media

03 Semester Credits

Focus on the power of story structure in communications. Explore the craft of storytelling, whether it be to entertain, teach, motivate, sell or provoke with examples from film, television, literature, commercials, music videos, even video games. Take real-life scenarios and respond to them with arguments constructed by the traditional aspects of drama. Discuss all facets of pre-production. Learn the organizational skills and techniques necessary to create a production notebook used for planning a motion media production.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

MARS-1120 Media Arts and Studies Colloquium

01 Semester Credit

Introduces students to the leading local producers, strategists and clients in the field of video and interactive communications. Industry professionals representing the broadcasting, commercial production, corporate, non-profit and entertainment industries present specific case histories.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

MARS-2110 Editing

03 Semester Credits

Basic motion media editing using industry standard, non-linear, editing software and hardware. Students will learn the basic concepts and techniques used to edit a project from the organizational phase through fine-tuning a completed project including delivery.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCDV-1180 Introduction to Digital Video and Digital Filmmaking or departmental approval.

MARS-2120 Advanced Editing

03 Semester Credits

Advanced motion media editing using industry standard, non-linear, editing software and hardware. Prepares students for industry recognized certification exam in professional editing software. Successful completion of the certification exams allows students to be listed as a certified editing professional on the official website of the software distributor. Builds upon concepts introduced in prerequisite coursework including the basics in motion media editing using industry standard, non-linear, editing software and hardware. Students will learn the concepts

and techniques used to edit a project from the organizational phase through fine-tuning a completed project including delivery.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCDV-1180 Introduction to Digital Video and Digital Filmmaking and MARS-2110 Editing.

MARS-2220 Advanced Crew and Set Operations for Motion Media

03 Semester Credits

Learn to work as a skilled crew member for a film or video production on location and/or soundstage environment.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): VCDV-2180 Digital Cinematography, and MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media, or department approval.

MARS-2620 Applied Integrated Media (AIM) I: Real World Pre-production

03 Semester Credits

Practical experience in a real-world pre-production environment. Skills learned in introductory media arts courses and related technical classes are applied to an actual communications mission. Students take on roles as members of the pre-production team as they cover all facets of planning and pre-production for a major motion media project. Diverse media projects may include: advertising/public service campaigns, feature films, documentaries, media-centered performances, or media installations.

Lecture 00 hours. Laboratory 06 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): VCDV-1180 Introduction to Digital Video and Digital Filmmaking, and MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media and department approval: permission of Associate Dean of Media Arts.

MARS-2720 Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media

03 Semester Credits

Application of skills learned in introductory media arts courses and related technical classes to a motion media production. Collaborate on a project as a member of a student-lead production team. Project may include: advertising/public service campaigns, short or feature film, documentary, media-centered live performance, or media installation. Course may be repeated once for up to six credits.

Lecture 00 hours. Laboratory 06 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): MARS-2620 Applied Integrated Media (AIM) I: Real World Pre-production or departmental approval: permission of instructor.

MARS-2940 MARS Field Experience**01-02 Semester Credits**

Planned activity within the professional community, which relates to students' occupational objectives. Experience should reinforce classroom/lab skills. May be repeated for a maximum of six credits with departmental approval.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 12 hours per week per credit hour.

Prerequisite(s): Departmental approval.

MARS-2990 Media Arts and Studies Professional Prep and Portfolio Review**02 Semester Credits**

Capstone Course. Preparation to interview for jobs within the field of motion media, along with professional resume and portfolio development for completion. Focuses on individual attributes in presentation skills and creativity. Students refine their best work completed during the program, adding items that might enhance their transfer into the job market.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Concurrent enrollment in MARS-2720 Applied Integrated Media (AIM)II: Real World Production and Post-Production for Motion Media, or departmental approval.

MEDICAL ASSISTING - MA**MA-1010 Introduction to Medical Terminology****02 Semester Credits**

Introduction to medical terminology used by health care professionals with emphasis on the basics of word building, defining, spelling, reading practice, and pronunciation. Designed to provide students with foundation for medical word building and to help students who intend to enroll in Medical Terminology I and/or Anatomy and Physiology in Biology.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

MA-1020 Medical Terminology I**03 Semester Credits**

Terminology utilized by health care professionals. Emphasis on correct spelling, definition, and pronunciation. Usage of basic and complex medical terms related to the body as a whole, and to the musculoskeletal, digestive, respiratory, urinary, female reproductive, male reproductive and cardiovascular systems. Proficient use of medical dictionary is emphasized.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OHL005

MA-1110 Reimbursement for Physician Services**02 Semester Credits**

Basic overview of insurance forms, terms, and coding methodologies used in the physician office. Introduction to reimbursement methodologies and claims processing procedures for the medical office. Review basics of CPT, ICD 9, and HCPCS. Includes electronically filing a CMS1500 form and completing "clean claims", and how to follow up on rejected claim forms. Also provides a brief introduction of ICD 10.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

MA-1321 Medical Office Laboratory Procedures**02 Semester Credits**

Basic principles of laboratory knowledge in the operations of a physician's office laboratory. Safety regulations along with the regulatory agency guidelines and requirements. A heavy emphasis is placed on patient instruction in the collection of a specimen, the proper processing of specimen to ensure a reliable result, and the reporting of test results.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in MA-132L Medical Office Laboratory Procedures and departmental approval: admission to Medical Assisting program.

MA-132L Medical Office Laboratory Procedures**01 Semester Credit**

Laboratory component to the Medical Office Laboratory Procedures course. Includes the importance of quality control and quality assurance in the physician's office laboratory. Technical procedures for venipuncture and capillary sticks, and collection and processing of specimens covered. Laboratory testing including basic urinalysis, microbiology testing, serological testing, hematology testing and point of care testing. Occupational Safety & Health Administration (OSHA) and Clinical Laboratory Improvement Amendment (CLIA) regulations will be taught as they apply to the Physician Office Laboratory (POL).

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in MA-1321 Medical Office Laboratory Procedures.

**MA-1401 Basic Clinical Medical Assisting
01 Semester Credit**

Apply theory required by medical assistant to perform fundamental clinical assisting procedures in physician's office, clinic, family practice center, urgent care or hospital. Includes basic anatomy and physiology of the body systems as related to diseases, disorders, nutrition, and specified medical tests. Provide patient education and appropriate interactions that are sensitive to the needs of diverse populations and special needs. Students will also learn how to triage office emergencies and to perform CPR/First Aid when necessary.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in MA-140L Basic Clinical Medical Assisting Lab.

**MA-140L Basic Clinical Medical Assisting Lab.
01 Semester Credit**

Laboratory component to Basic Clinical Medical Assisting course. Perform fundamental clinical assisting procedures in the physician's office, clinic, family practice centers, urgent cares, or hospital. Perform procedures used in patient examinations including medical asepsis, vital signs including anthropometric measurements, positioning and draping, visual and hearing acuity screenings, perform EKG's, Holter Monitors, Pulmonary Function Tests, Phlebotomy, Capillary sticks, and the administration of injections.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in MA-1401 Basic Clinical Medical Assisting, and departmental approval: admission to Medical Assisting program.

**MA-1503 Administrative Procedures for the Medical Office
02 Semester Credits**

Prepares students to handle the day-to-day front office operations in a medical facility. Office communications are simulated by typing various forms of correspondences seen in the physician's office. Receiving and sorting of incoming mail, scheduling appointments and surgeries, setting up new offices, phone techniques and etiquette, maintaining medical records, and Health Insurance Portability and Accountability Act (HIPAA) emphasized. Learn the skills necessary to become an office manager, including terminations, hirings, bookkeeping and finances. Emphasis is placed on electronic technology used in today's medical office practices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in MA-150L Administrative Procedures Laboratory, and departmental approval: admission to Medical Assisting program.

**MA-150L Administrative Procedures Laboratory
01 Semester Credit**

Laboratory component of Administrative Procedures for the Medical Office course. Practice handling the day-to-day operations in the front office of a medical practice.

Communicate both verbally and non-verbally, receiving and sorting mail, appointment scheduling (both manually and electronically), filing, handling prescription refills, telephone techniques, maintaining medical records, finances and banking of the practice, human resources, marketing and customer service techniques. Protection of patient information and records, including the Health Insurance Portability and Accountability Act (HIPAA). Strong emphasis in teaching and learning the Electronic Medical Health Record.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Concurrent enrollment in MA-1503 Administrative Procedures for the Medical Office and departmental approval: admission to Medical Assisting programs.

**MA-2010 Medical Terminology II
02 Semester Credits**

Terminology utilized by health care professionals. Emphasis on spelling, definition, pronunciation, and usage of basic and complex medical terms related to hematology, lymphatic, integumentary, special senses, nervous, psychiatric and endocrine systems. Emphasis on reading, translating and composing medical documents. Proficient use of medical dictionary emphasized.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MA-1020 Medical Terminology I, or departmental approval: related work experience.

**MA-2412 Advanced Clinical Medical Assisting
02 Semester Credits**

Theory required by the medical assistant to perform advanced procedures in the physicians office, clinic, or family practice center. Assisting the physician with specialized examinations and treatments; explanations of specialized diagnostic and laboratory procedures; the medical assistant's role in educating the patient in treatment and prevention of diseases, as they all pertain to the following systems: integumentary, musculoskeletal, senses, respiratory, digestive, nervous, urinary, and reproductive.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): HTEC-1610 Introduction to Pharmacology and MA-1321 Medical Office Laboratory Procedures, and MA-132L Medical Office Laboratory Procedures, and MA-1401 Basic Clinical Medical Assisting, and MA-140L Basic Clinical Medical Assisting Lab., and MA-1503 Administrative Procedures for the Medical Office, and MA-150L Administrative Procedures Laboratory, and concurrent enrollment in MA-241L Advanced Clinical Assisting Lab.

MA-241L Advanced Clinical Assisting Lab

01 Semester Credits

Laboratory component to Advanced Clinical Assisting course. Practice psychomotor skills required by the medical assistant to perform advanced procedures in the physicians office, clinic, or family practice centers. Emphasis will be placed on mastering those skills related to Ophthalmology, Otology, Gastroenterology, Urinary, Male Reproduction, Obstetrics, Gynecology, Pediatrics, Orthopedics, Neurology, Mental Health, Endocrinology, Pulmonary, and Geriatric Medicine.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): MA-1321 Medical Office Laboratory Procedures, and MA-132L Medical Office Laboratory Procedures, and MA-1401 Basic Clinical Medical Assisting, and MA-140L Basic Clinical Medical Assisting Lab., and MA-1503 Administrative Procedures for the Medical Office, and MA-150L Administrative Procedures Laboratory, and concurrent enrollment in MA-2412 Advanced Clinical Medical Assisting.

MA-2860 Medical Assisting Practicum

02 Semester Credits

Capstone course in Medical Assisting. Supervised clinical experience in a physician's office, clinic or family practice center. Students perform duties of a medical assistant while rotating through administrative and clinical areas of a physician's office, clinic or family practice center.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 210 hours per semester.

Prerequisite(s): Concurrent enrollment in MA-2412 Advanced Clinical Medical Assisting and MA-2980 Medical Assisting Seminar.

MA-2980 Medical Assisting Seminar

01 Semester Credit

Principles, procedures, and practical application of administrative, clinical and special medical assisting procedures. Opportunity to compare and contrast practices in various clinical settings. Discussion of certification and preparation to function as a certified medical assistant. Discussion of future trends in medical assisting profession.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Concurrent enrollment in MA-2860 Medical Assisting Practicum, or departmental approval.

MEDICAL LABORATORY TECHNOLOGY - MLT

MLT-1000 Introduction to Medical Laboratory Technology

03 Semester Credits

This introduction to Medical Laboratory Technology provides an overview of the profession, safety, blood collection and processing, code of ethics, basic clinical laboratory equipment and instrumentation, basic lab math, quality control and assurance.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning or higher.

OAN Approved: OHL008

MLT-1300 Introduction to Blood Collection

03 Semester Credits

Introduction to theory and practice of phlebotomy. Principles of aseptic technique and familiarity with phlebotomy equipment. Performance of venipunctures and capillary punctures. Universal precautions and safety of phlebotomist and patient strictly enforced.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I, and departmental approval: admission to Health Career/Nursing program.

MLT-1351 Problem Solving Techniques for the Medical Laboratory

02 Semester Credits

Review of basic algebra and measurement systems. Study of formula evaluation, unit analysis and conversions, dilutions, concentrations, calculations specific to clinical analytes and Beer's Law. Construction of standard curves, calculations and application of quality control parameters related to clinical laboratory medicine. Application and activities to build skills in problem solving.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1410 Elementary Probability and Statistics I, and departmental approval.

MLT-1491 Urinalysis and Body Fluids

03 Semester Credits

Theory and application of urine and body fluid analysis. Includes the anatomy and physiology of the kidney, physical, chemical and microscopic examination of the urine, cerebrospinal and other body fluids. Also includes diagnostic significance of test results and correlation with disease states, quality control, quality assurance and safety.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology, or departmental approval: related work experience.

OAN Approved: OHL010

MLT-1850 Medical Laboratory Practicum I

03 Semester Credits

Supervised clinical experience. Students rotate through hematology, and/or urinalysis, and/or phlebotomy departments for fourteen (14) hours per week meeting performance objectives of medical laboratory or laboratory phlebotomy personnel at the MLT level. Seminar discussion of practicum experience.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology, or MLT-1300 Introduction to Blood Collection, or concurrent enrollment, and departmental approval.

MLT-2461 Hematology

03 Semester Credits

An introduction to the theory, principles and procedures used in Hematology and Coagulation (Hemostasis). Hematopoiesis, enumeration, differentiation and evaluation of blood formed elements and the basic process of coagulation are discussed. Manual and automated techniques are explained, demonstrated and performed. Anemias, leukemias and other hematological disorders are studied, correlating test results with disease states. Problem solving skills are applied in related case studies and unknowns.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MA-1020 Medical Terminology I, and departmental approval.

OAN Approved: OHL009

MLT-2471 Immunohematology and Serology

05 Semester Credits

Study of immunohematologic (blood banking), immunologic and serologic principles and the application of testing procedures. Antigen-antibody reactions for ABO antigens, Rh (Rhesus) and other major blood group systems, compatibility testing, component therapy and production, acceptable donor criteria, transfusion transmitted diseases, diagnostic uses of serological tests. Performance of associated laboratory tests. Analysis of case studies, problem solving and clinical significance of results in diagnosis.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology.

MLT-2482 Clinical Microbiology

05 Semester Credits

Application of the principles and procedures utilized in clinical microbiology, mycology, parasitology and virology in the collection, identification and serological detection of organisms. Pathogenesis and prevention of disease. Media, methods of culture and isolation, biochemical and susceptibility testing, aseptic and staining techniques, sterilization and safety protocols are studied.

Analysis of case studies, problem solving and clinical significance of results in diagnosis.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology, and BIO-2500 Microbiology.

MLT-2501 Clinical Chemistry

05 Semester Credits

Principles, procedures and application of basic and advanced diagnostic tests in clinical chemistry for all body fluids. Emphasis on correlation of results with clinical significance, interpreting quality control data, and mastering basic lab skills.

Lecture 03 hours. Laboratory 06 hours.

Prerequisite(s): MLT-1000 Introduction to Medical Laboratory Technology, and MLT-1351 Problem Solving Techniques for the Medical Laboratory, and departmental approval.

MLT-2940 Medical Laboratory Field Experience

03 Semester Credits

Capstone course in Medical Laboratory Technology. Supervised clinical experience. Students rotate through chemistry, microbiology, serology, immunohematology, hematology/coagulation, body fluids laboratories, and phlebotomy departments for thirty-six (36) hours per week meeting performance objectives of medical laboratory personnel at the MLT level.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 36 hours per week.

Prerequisite(s): MLT-2990 Advanced MLT Applications

MLT-2970 Advanced Phlebotomy

01 Semester Credit

Review of theory and techniques for phlebotomy procedures. Presentation of basic procedures involved in point-of-care testing and unregulated laboratory test procedures. Emphasis on universal precautions, safety, communication, interpersonal skills, and ethical considerations relating to patients. Seminar discussion of practicum experience.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): MLT-1300 Introduction to Blood Collection, or departmental approval.

MLT-2980 Professional Development and Life Skills

Seminar

01 Semester Credit

Integration of knowledge acquired in basic, technical and non-technical areas in preparation for professional roles and lifelong professional growth and development. Seminar discussion of clinical experience.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Departmental approval.

MLT-2990 Advanced MLT Applications

06 Semester Credits

Manual laboratory skills related to clinical chemistry, hematology, coagulation, body fluids, microbiology, parasitology, mycology, immunohematology/serology are refined. The operation and maintenance of laboratory equipment, function verification, analysis of quality control and application of corrective action is studied and performed. Emphasis on organization, increased speed, accuracy, confidence and independent performance. Case studies are analyzed, data interpreted and findings are correlated to clinical significance and differential diagnoses. Advanced concepts in parasitology, mycology, immunohematology/serology, principles of education, molecular diagnostics, point of care, information systems and troubleshooting are introduced.

Lecture 01 hour. Laboratory 15 hours.

Prerequisite(s): MLT-1491 Urinalysis and Body Fluids, and MLT-2461 Hematology, and MLT-2501 Clinical Chemistry, and BIO-2500 Microbiology.

MUSIC - MUS

MUS-1010 Survey of European Classical Music

03 Semester Credits

Introduction to elements and styles of European classical music. Composers, works, instrumentation and forms studies in their cultural and historical context. Focus on listening and understanding European classical music.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1020 Survey of Jazz

03 Semester Credits

Introduction to basic elements and techniques of jazz. Function of jazz instrumentation, forms, improvisation and other musical elements and conventions indigenous to jazz. Characteristic features of various styles and artists studied. Focus on listening to and understanding jazz.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1030 Survey of Rock and Roll

03 Semester Credits

Survey of the most influential and innovative works and artists of rock music from origins to present. Includes terminology, techniques, style, instrumentation and lyrics, with references to cultural and historical context. Course involves listening to, reading and discussing artists and recordings. Focus on listening to and understanding rock and roll music.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1040 Survey of African-American Music

03 Semester Credits

Chronological study of history of African-American music from eighteenth century through 1920s. Oral traditions and performance practices studied in cultural and historical context. Sacred, folk, popular, and classical music and precursors of jazz discussed. Focus on listening to and understanding African-American music.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1050 Survey of World Music

03 Semester Credits

Introduction to elements and styles of music of diverse ethnic cultures. Instruments, forms, and concepts of music explored through art and folk music to develop an understanding of how basic materials of music work together. Focus on listening to and understanding music of diverse cultures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1100 Music for Elementary Education

03 Semester Credits

Designed to orient elementary teachers to role of music in growth and development of children. Emphasis on creating musical environment in the elementary school classroom. Study of young voice, basic theory, piano keyboard, music symbols and terms, and use of elementary classroom instruments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1110 Music Business I

03 Semester Credits

Examination of multiple facets of music industry. Includes exploration of career options, recording industry, performance and promotion, music business contracts, marketing of songs, music publishing, copyrights, and retail.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1120 Music Business II

03 Semester Credits

Artist promotion, management, music agents, music in advertising, concert promotion, arts administration, and music entrepreneurship.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1110 Music Business I.

MUS-1130 MIDI Technology I**03 Semester Credits**

Basic audio signal flow, MIDI (Music Instrument Digital Interface) principles and techniques, the virtual studio concept, computer-based sequencing and notation software and the operation of modern keyboard equipment.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

MUS-1140 MIDI Technology II**03 Semester Credits**

Further development of concepts and skills introduced in MIDI Technology I. Advanced sequencing and editing techniques, synchronization, digital audio recording, music notation and MIDI studio organization.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MUS-1130 MIDI Technology I.

MUS-1170 Songwriting I**02 Semester Credits**

Instruction in the art of contemporary songwriting. Includes consideration of form, rhythm, melody, lyric content, harmony, arranging, and development of individual style. Development of listening skills and criticism utilizing songs of class members and established artists.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1200 Music Reading Skills**03 Semester Credits**

Introduction to concepts and skills of reading music and music theory for pre-music and non-music majors. Includes study of notation, rhythm, scales, key signatures, intervals and triads.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1210 Introduction to Music Theory**03 Semester Credits**

Terminology, symbols, skills, and concepts of music theory for pre-music and non-music majors. Includes study of intervals, chords, voice leading and figured bass, compositional devices, transposition, analysis, and basic forms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1200 Music Reading Skills, or departmental approval.

MUS-1220 Basic Ear Training**02 Semester Credits**

Introduction to the development of aural skills for pre-music and non-music majors. Students develop discrimination skills including pitch and rhythm perception through sight singing and dictation.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1200 Music Reading Skills, or departmental approval.

MUS-1230 Critical Listening**01 Semester Credit**

Use of critical and analytic listening methods to evaluate frequency, sound quality, musical mix structure and to analyze common sound problems.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

MUS-1250 Class Keyboard I**02 Semester Credits**

Basic piano techniques and performance skills for pre-music and non-music majors. Emphasis on keyboard development in sight reading, improvising, transposing and harmonizing melodies in various styles. Includes solo and ensemble literature.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

OAN Approved: OAH019 (1 of 2 required courses)

MUS-1260 Class Keyboard II**02 Semester Credits**

Functional piano techniques and keyboard skills for pre-music and non-music majors. Keyboard development in second-level sight reading, transposing, improvising, and ensemble playing in various styles. Development of second level solo and ensemble repertoire.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1250 Class Keyboard I.

OAN Approved: OAH019 (2 of 2 required courses)

MUS-1270 Class Voice**02 Semester Credits**

Basic techniques of voice production. Includes breath control, diction, projection, tone-color, and interpretation for pre-music and non-music majors. Progressive vocal exercises and studies. Application of principles to performance of simple songs.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

MUS-1280 Class Guitar**02 Semester Credits**

Basic guitar techniques and performance skills for non-music majors, and music majors studying guitar as a second instrument. Special focus on skills for beginning guitarists and students pursuing music therapy careers. Emphasis on left hand development, plectrum technique, and chord and scale vocabulary and performance.

Application of principles to solo and ensemble literature.

Students will need their own guitar.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

MUS-1290 Basic Applied Music I**01 Semester Credit**

Individual instruction for pre-music and non-music majors on any standard band, orchestral instrument or voice. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 7 hours of concentrated practice each week.

Prerequisite(s): Departmental approval.

MUS-1301 Applied Piano Minor I**01 Semester Credit**

Private piano instruction for music majors with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for first semester. End of semester performance jury required.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 7 hours of concentrated practice each week.

Prerequisite(s): Departmental approval: audition.

MUS-1302 Applied Piano Minor II**01 Semester Credit**

Second-level private piano instruction for music major with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for second semester. End of semester performance jury required.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 7 hours of concentrated practice each week.

Prerequisite(s): MUS-1301 Applied Piano Minor I.

MUS-1460 Applied Music I**02 Semester Credits**

(See page 244 for enrollment instructions.) Applied instruction in musical instruments and voice for college students pursuing degrees in music. Development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature appropriate for first semester music majors. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 14 hours of concentrated practice each week. As a final exam, students will play a performance jury in front of music faculty at the end of the term of study to demonstrate proficiency.

Prerequisite(s): Departmental approval.

OAN Approved: OAH020

MUS-1470 Applied Music II**02 Semester Credits**

(See page 224 for enrollment instructions.) Second-level private instruction for music majors. Continued development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Standard repertoire including selected solo and method literature appropriate for second semester music majors. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: One private lesson and 14 hours of concentrated practice each week. As a final exam, students will play a performance jury in front of music faculty at the end of the term of study to demonstrate proficiency.

Prerequisite(s): MUS-1460 Applied Music I, or departmental approval.

OAN Approved: OAH020

MUS-1500 Choir**01 Semester Credit**

Performance class with concentration on standard repertoire, both sacred and secular, accompanied and a cappella for mixed voices. Public performance required. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: audition.

OAN Approved: OAH022

MUS-1510 Choral Ensemble**01 Semester Credit**

Performance of choral literature from Renaissance through 20th century for small select ensemble. Public performance required. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: audition.

OAN Approved: OAH022

MUS-1520 Jazz Ensemble**01 Semester Credit**

Study and experimentation in performance of jazz ensemble literature and styles. Public performance required. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: audition.

MUS-1530 Concert Band**01 Semester Credit**

Performance of band and wind ensemble literature by woodwinds, brass, and percussion players. Public performance required. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: audition.

OAN Approved: OAH022

MUS-1540 Orchestra**01 Semester Credit**

Performance of selected orchestral literature by string, woodwind, brass and percussion players. Public performance required. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: audition.

MUS-1550 Instrumental Ensemble**01 Semester Credit**

Performance of traditional and contemporary ensemble literature. Public performance required. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: audition.

OAN Approved: OAH022

MUS-1570 Technology Tools I**02 Semester Credits**

Designed to give music students practical knowledge and skills in the use of current computer, MIDI (Musical Instrument Digital Interface), and electronic instrument technologies for application in music theory, arranging, composition and performance. Includes basic computer, MIDI principles and techniques, computer-based notation and sequencing software, and operation of modern electronic keyboard instruments.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1210 Introduction to Music Theory, or departmental approval.

MUS-1580 Technology Tools II**02 Semester Credits**

Designed to give music students practical knowledge and skills in use of current computer, MIDI (Musical Instrument Digital Interface), and electronic instrument technologies for application in music theory, arranging, composition and performance. Includes advanced notation and sequencing editing techniques, digital audio recording and MIDI studio organization.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1570 Technology Tools I, or departmental approval.

MUS-1600 Traditional Theory I**03 Semester Credits**

Manipulation of musical materials including harmonic, melodic, rhythmic, and basic formal procedures with correlated creative works and analysis. Harmonization of figured bass and chorale writing including diatonic harmony and voice leading, melodic procedures and all non-harmonic tones. Analysis of common practice literature. Integrates harmonic and contrapuntal approaches to analysis and composition.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1210 Introduction to Music Theory.

OAN Approved: OAH052 (1 of 6 courses, all must be taken)

MUS-1610 Ear Training I**02 Semester Credits**

Identification of diatonic and chromatic intervals, triad qualities, scales and phrases. Melodic and rhythmic dictation, sight singing, and analytic listening. Introduction to harmonic function and holistic listening.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1220 Basic Ear Training.

OAN Approved: OAH052 (3 of 6 courses, all must be taken)

MUS-1620 Traditional Theory II**03 Semester Credits**

Introduction of modulation, chromatic materials and 20th century techniques. Integrates harmonic and contrapuntal approaches to analysis and composition.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1600 Traditional Theory I, and MUS-1610 Ear Training I.

OAN Approved: OAH052 (2 of 6 courses, all must be taken)

MUS-1630 Ear Training II**02 Semester Credits**

Second level identification of intervals, chord qualities, scales, phrases and harmonic function. Melodic and rhythmic dictation, sight singing, analytic and holistic listening.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1610 Ear Training I.

OAN Approved: OAH052 (4 of 6 courses, all must be taken)

MUS-1650 Jazz Theory I

02 Semester Credits

Introduction to theoretical foundations of jazz including a systematic examination of scales, hybrid modes and their practical applications, chord construction and notation, chord/scale relationships and applications, melodic construction and development, and analysis of transcribed solos and compositions from the jazz repertoire including the American standard song.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1600 Traditional Theory I.

MUS-1670 Jazz Performance and Improvisation I

02 Semester Credits

Improvisation within the jazz style and presentation as performance. Investigates essential relationship of the blues, American standard song and swing rhythm as central to the character of jazz. Memorization of standard repertoire.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1210 Introduction to Music Theory, and audition.

MUS-1680 Jazz Performance and Improvisation II

02 Semester Credits

Improvisation within the jazz style and presentation as performance. Includes modal combinations and chord change sequences, scale-tone 7th, harmonic movement within blues and standard song, phrasing, paraphrasing, playing in various keys and memorization of standard repertoire.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1670 Jazz Performance and Improvisation I.

MUS-1720 Arranging I

02 Semester Credits

Writing and arranging for the modern rhythm section including piano (keyboards), guitar, bass, drums and auxiliary percussion; writing and arranging techniques address the rhythm section as a unit and as part of a small or large ensemble.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1600 Traditional Theory I, or departmental approval.

MUS-179H Honors Contract in Music

01 Semester Credit

Honors Contract complements and exceeds requirements and objectives for an existing MUS 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly

scheduled basis with the instructor offering the contract for mentor-student tutorial sessions.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Music, whose instructor approves the Honors Contract.

MUS-1970 Music Seminar

01 Semester Credit

Discussion of current topics related to music careers including presentations, performances, recitals and clinics, music academic and career exploration. May be repeated for an accrued maximum of six credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 1 seminar hour per week.

Prerequisite(s): Departmental approval.

MUS-2030 British Invasion

02 Semester Credits

Survey of influential and representative works and artists of British Invasion beginning in 1964 including the Beatles, The Who, Rolling Stones, Kinks, and their contemporaries. Aesthetics, terminology, technique, style, instrumentation, lyrics, and technology.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1030 Survey of Rock and Roll.

MUS-2130 Music Production for Video and Film

03 Semester Credits

Using tools of the modern MIDI studio to write and produce an appropriate musical score for video and film. Topics include music scoring techniques and sound design, role of music in advertising and film industries, and communicating with client to determine musical direction.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MUS-1140 MIDI Technology II.

MUS-2140 Studio Maintenance

02 Semester Credits

Reviews basic electronics and sound principles, discusses set-up, calibration and operation of digital and analog recording and test equipment. Topics include studio layout, technical signal routing, equipment interface, grounding, maintenance and troubleshooting.

Lecture 00 hours. Laboratory 04 hours.

Prerequisite(s): RAT-1500 Recording Theory I, RAT-1511 Recording Lab I, and EET-1130 Basic Audio Electronics; or departmental approval.

MUS-2290 Basic Applied Music II

02 Semester Credits

Individual instruction for pre-music and non-music majors on any standard band, orchestral instrument or voice. May be repeated for credit; however, no more than 4 credits may be applied to degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

MUS-2301 Applied Piano Minor III

01 Semester Credit

Third-level private piano instruction for music major with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for third semester. End of semester performance jury required.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 7 hours of concentrated practice each week.

Prerequisite(s): MUS-1302 Applied Piano Minor II.

MUS-2302 Applied Piano Minor IV

01 Semester Credit

Fourth-level private piano instruction for music major with piano as minor instrument. Development of technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature for fourth semester. End of semester performance jury required.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 7 hours of concentrated practice each week.

Prerequisite(s): MUS-2301 Applied Piano Minor III.

MUS-2460 Applied Music III

02 Semester Credits

Third-level applied instruction in musical instruments and voice for college students pursuing degrees in music. Continued development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature appropriate for third semester music majors. Analysis of the forms of music for the individual instrument and their historical perspective. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 14 hours of concentrated practice are required each week.

Prerequisite(s): MUS-1470 Applied Music II, or departmental approval.

OAN Approved: OAH020

MUS-2470 Applied Music IV

02 Semester Credits

Fourth-level applied instruction in musical instruments and voice for college students pursuing degrees in music. Continued development of tone production, intonation, technical facility, rhythmic control, phrasing, stylistic interpretation and sight-reading skills. Development of standard repertoire including selected solo and method literature appropriate for fourth semester music majors.

Introduction to beginning teaching issues and techniques for the individual instruments. End of semester performance jury required. May be repeated up to 8 credits per instrument; only 2 credits total may be applied to degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: A private lesson and 14 hours of concentrated practice are required each week.

Prerequisite(s): MUS-2460 Applied Music III, or departmental approval.

OAN Approved: OAH020

MUS-2500 Music History and Literature I

03 Semester Credits

Chronological study of the history and development of European classical music from origins through the 18th century. Detailed attention to selected pieces from Medieval, Renaissance, Baroque, and Classical periods.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1620 Traditional Theory II.

MUS-2510 Music History & Literature II

03 Semester Credits

Chronological study of history and development of European classical music from 19th century through present time. Detailed attention to selected pieces.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1620 Traditional Theory II.

MUS-2520 Jazz History I

02 Semester Credits

Chronological study of history and development of classic jazz from origins through the Swing period. Detailed attention to selected jazz masters and analysis of their most important works.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1650 Jazz Theory I.

MUS-2530 Jazz History II

02 Semester Credits

Chronological study of history and development of modern jazz from Bebop through present time. Detailed attention to selected jazz masters and analysis of their most important works.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1650 Jazz Theory I.

MUS-2540 Jazz History Listening I

01 Semester Credit

Through directed, analytical and comparative listening experiences, students gain detailed knowledge of and familiarity with selected works of jazz masters (circa 1850s -1940s) from pre-jazz roots music and early jazz through swing jazz. A listening laboratory and aural training course, this is a companion and supplement to MUS-2520 Jazz History I.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): MUS-1650 Jazz Theory I, and concurrent enrollment in MUS-2520 Jazz History I, or departmental approval.

MUS-2550 Jazz History Listening II

01 Semester Credit

Through directed, analytical and comparative listening experiences, students gain detailed knowledge of and familiarity with selected works of Modern Jazz masters from Bebop (1940s) to the present. A listening laboratory and aural training course, this is a companion and supplement to MUS-2530 Jazz History II.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): MUS-1650 Jazz Theory I, and concurrent enrollment in MUS-2530 Jazz History II, or departmental approval.

MUS-2600 Traditional Theory III

03 Semester Credits

Theory, analysis, and composition of European classical music from origins through 18th century. Detailed attention to selected pieces from Medieval, Renaissance, Baroque and Classical periods.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1620 Traditional Theory II, and MUS-1630 Ear Training II.

OAN Approved: OAH052 (5 of 6 courses, all must be taken)

MUS-2610 Ear Training III

02 Semester Credits

Third-level identification of intervals, seventh chords, scales, phrases and harmonic function. Melodic and rhythmic dictation, sight singing, analytic and holistic listening.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1630 Ear Training II.

MUS-2620 Traditional Theory IV

03 Semester Credits

Theory, analysis, and composition of European classical music from 19th century through present time. Detailed attention to selected pieces.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MUS-2600 Traditional Theory III, and MUS-2610 Ear Training III.

OAN Approved: OAH052 (6 of 6 courses, all must be taken)

MUS-2630 Ear Training IV

02 Semester Credits

Fourth level identification of intervals, seventh chords, scales, phrases and harmonic function. Melodic and rhythmic dictation, sight singing, analytic and holistic listening.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-2610 Ear Training III.

MUS-2650 Jazz Theory II

02 Semester Credits

Second level study of theoretical foundations of jazz. Includes diatonic and chromatic harmony, harmonic embellishment and substitution, voicings, rhythm, blues progressions and forms, phrase analysis, lyric import and analysis of transcribed solos and compositions from jazz repertoire.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1650 Jazz Theory I.

MUS-2660 Jazz Theory III

02 Semester Credits

Third-level of study of theoretical foundations of jazz. Includes modal structures, rhythm changes and substitutions; composition and improvisation; implications of lyrics on structure and articulation; and analysis of transcribed solos and compositions from jazz repertoire, including the American standard song.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-2650 Jazz Theory II.

MUS-2670 Jazz Performance and Improvisation III

02 Semester Credits

Third-level study of improvisation within jazz style and presentation as performance. Includes phrasing, minor ii-V-i, modal minor, chord structures and common progressions in all keys, and memorization of standard repertoire.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-1680 Jazz Performance and Improvisation II.

MUS-2680 Jazz Performance and Improvisation IV

02 Semester Credits

Fourth-level study of improvisation within jazz style and presentation as performance. Includes performance of accumulated repertoire, blues composition, refined group playing and performance of memorized standard repertoire in all keys.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): MUS-2670 Jazz Performance and Improvisation III.

MUS-2710 Arranging II

02 Semester Credits

Building on the rhythm section, this study concentrates on writing for trumpet, trombone and saxophone individually, in combination and as instrumental families. Ranges, tonal color, combinations in the context of an arrangement are investigated. Further development of skills introduced in Arranging I.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-1720 Arranging I, or departmental approval.

MUS-2720 Arranging III

02 Semester Credits

Development of the linear approach to multiple horn scoring, focusing on backgrounds, supporting lines, and contrapuntal devices as well as melodic presentation; further development of the skills introduced in Arranging II. Elements of arranging for the large ensemble and studio orchestra will be introduced.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): MUS-2710 Arranging II, or departmental approval.

MUS-2740 Internship

01-03 Semester Credits

Provides student with on-the-job application of skills learned in the liberal arts and specifically music. Each internship based on individualized learning contract. Requirement for one credit is 180 hours of approved work per semester.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Internship: 180 clock hours of approved work per credit hour.

Prerequisite(s): Department approval: completion of 30 semester credits; completion of 15 semester credits at Cuyahoga Community College; 2.75 GPA; completion of 20 semester credits in liberal arts; completion of 9 semester credits in Music; two letters of recommendation from liberal arts faculty, one of which must be from area of placement.

NUCLEAR MEDICINE - NMED

NMED-1010 Nuclear Medicine Math and Statistics

01 Semester Credits

Examines the mathematics associated with the field of nuclear medicine including formulas and calculations involving radioactive decay, radiations safety, quality control, clinical procedures, statistical analysis, and kit and dose preparation.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to program.

NMED-1100 Computers in Nuclear Medicine

01 Semester Credits

Study of computer systems used in the field of nuclear medicine. Topics include the gamma camera computer system interface, data acquisition, image processing software and techniques, quality control, tomography, and radiopharmacy record keeping. Teleradiography and medical informatics is included.

Lecture .05 hour. Laboratory 01 hours.

Prerequisite(s): Departmental approval: admission to specified program.

NMED-1200 Radiation Safety & Biology

02 Semester Credits

Potential effects of ionizing radiation on biological systems, especially humans including known high dose effects and theories of low dose effects. Radiation risks and applicable quantities and units. Estimating absorbed doses from internally administered radioactive materials. Safe handling of radioactive materials and the disposal of radioactive waste. Radiation safety regulations and safety guidelines including personnel monitoring and accurate record keeping.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to program.

NMED-1301 Nuclear Medicine Procedures I

03 Semester Credits

Methods of performing patient organ visualization procedures in nuclear medicine. Review of anatomy, physiology and pathology of the various organs, radiopharmaceuticals, applicable instrumentation, methodologies, and techniques utilized. Including radiation safety techniques, patient care, patient preparation, and patient imaging for nuclear studies.

Lecture 03 hour. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in NMED-130L Nuclear Medicine Laboratory I and departmental approval: admission to the program.

NMED-130L Nuclear Medicine Laboratory I

01 Semester Credits

Introduction to and application of lab practices of a Nuclear Medicine Technologist including radiopharmaceutical and instrumentation principles. Emphasis on radiation safety, practicing quality assurance, and instrumentation controls.

Lecture 00 hour. Laboratory 02 hours.

Prerequisite(s): Concurrent enrollment in NMED-1301 Nuclear Medicine Procedures I, and departmental approval: admission to program.

NMED-1401 Patient Care for Nuclear Medicine 01 Semester Credits

Practice of advanced patient care skills, essential to providing high-quality patient care. Includes patient positioning skills, patient safety, communication, age-specific needs, and emergency care. Respect for individuals from different cultures, beliefs, gender orientations, and socioeconomic backgrounds are discussed. Legal and compliance issues, scopes of practice, and patients' rights are addressed. Includes certification in cardiopulmonary resuscitation.

Lecture 00 hour. Laboratory 03 hours.

Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I, and departmental approval: admission to program.

NMED-1501 Radiation Physics 02 Semester Credits

Study of physics as it relates to radiation and medical imaging. Focuses on the principles of radioactivity, effects of radiation on matter, and emerging technologies as they relate to nuclear medicine and advanced molecular imaging. Topics include applicable classical physics concepts, atomic structure, mass-energy relationships, types of radiation, calculations of radioactive decay, production of radionuclides and x-rays, and principles and operation of SPECT, PET, CT, MRI and fusion imaging systems.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the Nuclear Medicine Program or the Magnetic Resonance Imaging Program.

NMED-1602 Nuclear Radiopharmacy and Pharmacology 04 Semester Credits

Theory and practice of radiopharmacy including non-radioactive interventional drugs and contrast media. Addresses the routes of administration, bio-distribution mechanisms, interfering agents, contraindications, and adverse effects for all administered materials. Preparation and calculation of the dose to be administered, quality control, radiation safety, and applicable regulations are also covered.

Lecture 04 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to the program.

NMED-1701 Nuclear Medicine Instrumentation 03 Semester Credits

Demonstration of instrumentation use for both non-imaging and imaging such as: monitoring equipment (surveys), dose calibrators, well counters, uptake probes, laboratory equipment, gamma probe and gamma camera. Provide Review regarding imaging components, use, and QC performance and requirements. Explain and demonstrate configuration, function and application of computers and networks used in the reconstruction of

images. Includes practical considerations, concepts, data analysis, measurement concerns, and spectroscopy.

Lecture 03 hour. Laboratory 00 hours.

Prerequisite(s): NMED-1501 Radiation Physics, or concurrent enrollment; and NMED-1602 Nuclear Radiopharmacy and Pharmacology.

NMED-1740 Magnetic Resonance Imaging (MRI) Safety 01 Semester Credit

Introduce basic MRI safety principles including patient management, clinical safety standards, magnet safety education of ancillary staff and patients, management of emergencies in the MRI suite, and contrast agents safety.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning and departmental approval: admission to MRI program.

NMED-1750 MRI Principles 03 Semester Credits

Introduction of key principles of MRI and magnetism including: history of MR, nuclear magnetism, magnetic properties, electromagnetic spectrum, basic types of magnets, differences in field strength and relationship to image quality, and hardware, specifically the RF system, gradient system, shim system, magnet and ancillary equipment. Shielding, coil designs and types.

Basic principles are expanded to instruction of MR Signal Production, resonance, MR Signal

Induction/Sampling/Conversion, MR Image Contrast Characteristics (T1, T2, PD, etc), tissue characteristics.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): NMED-1740 Magnetic Resonance Imaging (MRI) Safety or concurrent enrollment; and departmental approval: admission to MRI program.

NMED-1770 Immunology and Pathophysiology for Sectional Imaging

02 Semester Credits

Introduction to pathophysiology and immunology.

Emphasis is on common pathologies found in nuclear medicine, computed tomography, and magnetic resonance imaging and the appearance of these pathologies across multiple planes in various imaging protocols. Includes all commonly-imaged body systems with recognition of abnormal conditions across multiple planes and ability to make the associated imaging changes required to adequately demonstrate the patients pathology.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in NMED-1780 Sectional Anatomy for Advanced Molecular Imaging

NMED-1780 Sectional Anatomy for Advanced Molecular Imaging**02 Semester Credits**

Study of human anatomy and its appearance in multiple planes. Includes all commonly imaged body systems and areas as well as discernment of abnormal pathology and how to make the associated imaging changes required to adequately demonstrate the patients anatomy and pathology. Covers imaging planes and anatomy imaged by nuclear medicine, computed tomography, and magnetic resonance imaging.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I; and concurrent enrollment in NMED-1770 Immunology and Pathophysiology for Sectional Imaging, and departmental approval : admission to program.

NMED-1945 MRI Field Experience I**01 Semester Credit**

This course provides clinical experience in a magnetic resonance imaging department under direct supervision of qualified personnel. Sessions emphasize the team approach on a day-to-day operation of a MR Department. Clinical experience will include patient care, procedures, MRI safety, quality control, equipment manipulation and patient positioning. Students will gain clinical experience in the clinical environment for 15 hours a week for a minimum of 12 weeks.(the last 12 weeks of the 16 week Fall semester).

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 hours of clinical experience must be completed to gain the experience necessary to complete clinical competencies

Prerequisite(s): NMED-1740 Magnetic Resonance Imaging (MRI) Safety, or concurrent enrollment; and NMED-1750 MRI Principles, or concurrent enrollment.

NMED-2010 MRI Pulse Sequences, Image Formation and Image Contrast**02 Semester Credits**

Comprehensive overview of MR pulse sequences, image formation and image contrast. Pulse sequences include spin echo, fast spin echo, gradient echo, inversion recovery, echo planar, parallel imaging and spectroscopy. Also, covers tissue characteristics, contrast agents and postprocessing techniques.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): NMED-1750 MRI Principles.

NMED-2020 MRI Parameters, Imaging Options and Quality Assurance**02 Semester Credits**

Focuses on parameters and imaging options used to create MRI images. Optimal imaging parameter settings are crucial to obtaining quality. Quality assurance measures are also introduced. A knowledge base in parameter applications, imaging options and quality assurance

allows technologists to obtain the highest quality images, thus ensuring accurate diagnosis of the patient's condition. *Lecture 02 hours. Laboratory 00 hours.*

Prerequisite(s): NMED-1750 MRI Principles and NMED-2010 MRI Pulse Sequences, Image Formation and Image Contrast.

NMED-2030 MRI Imaging Procedures**01 Semester Credit**

Imaging techniques related to the central nervous system (CNS), neck, thorax, musculoskeletal system and abdominopelvic regions. Covers specific clinical application, coils, considerations in the scan sequences, specific choices in the protocols (e.g., slice thickness, phase direction and flow compensation), and positioning criteria. Anatomical structures, the plane that best demonstrates anatomy, and signal characteristics of normal and abnormal structure discussed. Examines the variations in imaging parameters for specific body regions and the resultant effect on signal characteristics and the anatomy represented. Evaluation criteria for determining the quality of images included.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): NMED-1750 MRI Principles, and NMED-1760 Sectional Anatomy & Pathology, and NMED-2010 MRI Pulse Sequences, Image Formation and Image Contrast, and concurrent enrollment in NMED-2020 MRI Parameters, Imaging Options and Quality Assurance.

NMED-2040 MRI Comprehensive Review**01 Semester Credit**

Students will have the opportunity to prepare for the ARRT MRI certification examination. Content of this review will provide an understanding of MRI key concepts and theories. MRI principles, image formation, processes and safety concerns will be reviewed. Mock registry exam questions will allow the student to assess his/her knowledge of the material and review important concepts for MRI staff technologists.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

NMED-2301 Nuclear Medicine Procedures II**03 Semester Credits**

Study of diagnostic nuclear medicine procedures relating to the central nervous, genitourinary, and cardiovascular systems as well as tumor imaging. This course includes anatomy and physiology, pathophysiology, and protocols for routine and non-routine nuclear medicine procedures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I NMED-1602 Nuclear Radiopharmacy and Pharmacology NMED-1701 Nuclear Medicine Instrumentation, and NMED-1501 Radiation Physics.

NMED-230L Nuclear Medicine Laboratory II

01 Semester Credits

Continued application of lab practices of a Nuclear Medicine Technologist including experimentation with radiopharmaceutical and instrumentation principles. Emphasis on radiation safety, practicing quality assurance, and instrumentation.

Lecture 00 hour. Laboratory 02 hours.

Prerequisite(s): NMED-1301 Nuclear Medicine Procedures I and NMED-130L Nuclear Medicine Laboratory I and NMED-1501 Radiation Physics and NMED-1602 Nuclear Radiopharmacy and Pharmacology; and concurrent enrollment in NMED-2301 Nuclear Medicine Procedures II.

NMED-2600 Molecular and Fusion Imaging

02 Semester Credits

Examines the methodology of advanced molecular imaging and fusion imaging in the field of nuclear medicine and analyze current trends and advances in the field. Focus is made on patient preparation, imaging protocols, radiation safety, and special considerations for fusing nuclear medicine studies with computed tomography and magnetic resonance imaging.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): NMED-1501 Radiation Physics and NMED-1701 Nuclear Medicine Instrumentation.

NMED-2660 Nuclear Medicine Therapy

01 Semester Credits

Study the principles and practices of nuclear medicine therapies including palliation, cancer treatment, theranaustics, radioimmunotherapies with monoclonal antibodies, and regulations for therapy. Examines special considerations in regards to patient preparation, radiation safety, and dose determination for various therapies. Examine radionuclides used in therapy including characteristics and production. Emerging technologies and clinical trials will be explored.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): NMED-1200 Radiation Safety & Biology.

NMED-2700 Nuclear Medicine Research Methods

01 Semester Credits

Basic types of scientific and clinical research, research methods, and the components of a research study. Requires the research, review, discussion, and analysis of current research related to the field of nuclear medicine and advanced molecular imaging.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): NMED-2600 Molecular and Fusion Imaging and NMED-2660 Nuclear Medicine Therapy.

NMED-2940 Nuclear Medicine Field Experience I

03 Semester Credits

Clinical experience in the nuclear medicine department under the direct supervision of qualified personnel. Participation in variety of nuclear medicine procedures emphasizing application of theory related to nuclear

imaging protocols, patient care, radiopharmaceutical preparation, quality control, survey and wipe techniques, instrumentation, radiation accident prevention and radiation safety to include clinical projects and case studies. Clinical rotations through variety of specialty areas including nuclear medicine studies of various patient age groups (pediatrics/geriatric) and pathologies.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 36 hours per week for 10 weeks (360 hours per semester).

Prerequisite(s): NMED-2301 Nuclear Medicine Procedures II, or departmental approval.

NMED-2950 Nuclear Medicine Field Experience II

04 Semester Credits

Supervised sessions in nuclear medicine department with specific assignments and case studies to include math problems and instrumentation. Clinical rotations through variety of specialty areas including nuclear medicine studies of various patient age groups (pediatrics/geriatric) and pathologies.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 36 hours per week for 16 weeks (576 hours per semester).

Prerequisite(s): NMED-2940 Nuclear Medicine Field Experience I, or departmental approval.

NMED-2955 MRI Field Experience II

01 Semester Credit

Supervised sessions in the Magnetic Resonance Imaging Department with specific assignments and case studies. The design and scheduling of the student's clinical rotation(s) is dependent upon the student's program standing and competency level. Clinical rotations through clinical partners will provide a variety of clinical experiences and processes.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 12 hours of clinical field experience per week for 15 weeks (180 total hours).

Prerequisite(s): NMED-1945 MRI Field Experience I.

NMED-2960 Nuclear Medicine Field Experience III
04 Semester Credits

Capstone course in Nuclear Medicine. Supervised sessions emphasizing team approach to daily operation of a nuclear medicine department. Includes patient care, procedures, radiation safety, quality control, equipment manipulation and patient positioning. Clinical rotations through a variety of specialty areas including nuclear medicine studies of various patient age groups (pediatrics/geriatric) and pathologies. Preparation for employment in nuclear medicine and for the American Registry of Radiologic Technologists' examination in Nuclear Medicine to include mock examinations.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 36 hours per week for 16 weeks (576 hours per semester).

Prerequisite(s): NMED-2950 Nuclear Medicine Field Experience II, or departmental approval.

NMED-2965 MRI Field Experience III
01 Semester Credit

Supervised sessions emphasizing day-to-day operation of a MRI Department. Includes patient care, procedures, MRI safety, quality control, equipment manipulation processing and patient positioning.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 12 hours of field experience per week for a minimum of 15 weeks (180 hours per semester).

Prerequisite(s): NMED-2955 MRI Field Experience II.

NURSING - NURS

NURS-1300 Health Assessment
02 Semester Credits

Focuses on development of assessment skills including obtaining a health history, performing physical assessment of the adult, and evaluating physiologic changes related to aging. Major emphasis on developing interviewing skills, assessing cultural factors, and utilizing basic assessment techniques. Documentation and reporting of findings discussed. Laboratory screening procedures introduced.

Lecture 01 hour. Laboratory: On-campus: 02 hours.

Prerequisite(s): Departmental approval: admission to Associate Degree Nursing program or Practical Nursing program.

NURS-1450 Self-Care Needs: Adult Life Span
08 Semester Credits

Study of basic nursing care of adults through the adult life span, using Orem's self-care deficit theory. Specialized care of the elderly is included. Introduces major nursing curriculum themes: nursing process, communication, human development, cultural diversity, critical thinking

and role of the associate degree nurse. Basic concepts of pharmacology and normal nutrition presented.

Lecture 04 hours.

Laboratory: On-campus & clinical: 12 hours.

Prerequisite(s): BIO-1100 Introduction to Biological Chemistry, BIO-2331 Anatomy and Physiology I, ENG-1010 College Composition I, MATH-1250 Contemporary Mathematics, NURS-1300 Health Assessment, PSY-1010 General Psychology; and PSY-2020 Life Span Development, or concurrent enrollment; and departmental approval: admission to Nursing Program.

NURS-1600 Health Deviations I
08 Semester Credits

Focuses on patients with acute and chronic health deviations. Critical thinking, Orem's self-care deficit theory, and the nursing process provide the framework for delivery of nursing care to adult patients. Emphasis on health deviations related to respiratory and musculo-skeletal function, fluid and electrolyte balance, reproductive, and urologic disorders, surgery, diabetes, pain, HIV and oncology.

Lecture 04 hours.

Laboratory: On-campus & clinical: 12 hours.

Prerequisite(s): NURS-1450 Self-Care Needs: Adult Life Span; BIO-2341 Anatomy and Physiology II, or concurrent enrollment; and BIO-2500 Microbiology, or concurrent enrollment; and departmental approval.

NURS-160A Access to Registered Nursing
03 Semester Credits

Designed to facilitate transition of Licensed Practical Nurses into the Associate Degree Nursing program. Concepts related to role of associate degree nurse, therapeutic communication, nursing process and teaching/learning.

Lecture 02 hours. Laboratory: On-campus: 02 hours.

Prerequisite(s): Departmental approval.

NURS-160D Health Deviations I for LPNs
03 Semester Credits

Designed for Licensed Practical Nurses entering the Associate Degree Nursing program with advanced credit. Introduces nursing curriculum themes. Focuses on patients with acute and chronic health deviations related to fluid and electrolyte balance, urologic disorders, diabetes, and oncology.

Lecture 02 hours. Laboratory: Clinical: 03 hours.

Prerequisite(s): NURS-160A Access to Registered Nursing, or concurrent enrollment; and PSY-2020 Life Span Development, or concurrent enrollment; and BIO-2331 Anatomy and Physiology I, or concurrent enrollment; and departmental approval: admission to the Associate Degree Nursing Program.

NURS-1701 Community/Home Nursing

01 Semester Credit

Critical thinking, Orem's self-care deficit theory, and the nursing process provide the framework for the delivery of nursing care to individuals and groups within the community. Emphasis is placed on health promotion, risk reduction, cultural sensitivity, and nursing management of vulnerable populations and patients with selected sexually transmitted, parasitic, and other infectious disease processes.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): NURS-1600 Health Deviations I, or concurrent enrollment, or NURS-160A Access to Registered Nursing and NURS-160D Health Deviations I for LPNs; and departmental approval.

NURS-2300 Specialized Health Care Needs

09 Semester Credits

Critical thinking, Orem's self-care deficit theory and the nursing process provides the framework for the delivery of nursing care to specialized populations which includes childbearing families, children and their families, and individuals with psychiatric-behavioral health needs. Emphasis on therapeutic nurse-patient relationships and communication, and common psychiatric and behavioral health conditions; pediatric growth and development and common pediatric conditions; and care of childbearing women and their families.

Lecture 05 hours.

Laboratory: On-campus and Clinical: 12 hours.

Prerequisite(s): NURS-1600 Health Deviations I, or NURS-160D Health Deviations I for LPNs; and NURS-1701 Community/Home Nursing or concurrent enrollment; and departmental approval.

OAN Approved: OHL012

NURS-2400 Health Management

01 Semester Credit

Capstone course in Nursing. Exploration of role of associate degree nurse and transition into practice emphasizing major health care issues, trends and patterns of care. Presentation and analysis of management concepts in health care organizations.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in NURS-2501 Health Deviations II, and departmental approval.

NURS-2501 Health Deviations II

08 Semester Credits

Focuses on chronic, acute and critically ill patients. Orem's theory of self-care deficits, critical thinking, and the nursing process provide the framework for delivery of nursing care to groups of patients and their families. Concepts of communication, human development, and cultural diversity are integrated throughout course material. Emphasis is placed on care required to meet self-care deficits for patients with cardiac, hematological, gastrointestinal, respiratory, neurological, skin,

autoimmune, and endocrine disorders. Principles of management and delegation are applied through a nursing leadership experience.

Lecture 04 hours. Laboratory: On-campus and clinical: 12 required hours.

Prerequisite(s): NURS-2300 Specialized Health Care Needs, or concurrent enrollment in NURS-2400 Health Management; and departmental approval.

OCCUPATIONAL THERAPY ASSISTING TECHNOLOGY - OTAT

OTAT-1300 Occupational Therapy Principles

02 Semester Credits

Overview of history, development, philosophy, theory and practice of occupational therapy profession. Discussion of role and responsibilities of occupational therapy assistant. Study of models of health, illness, wellness, therapeutic and professional relationships; exploration of cultural, ethical and legal issues in health care. Roles and education of occupational therapy personnel and professional organizations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

OTAT-1310 Task Analysis

02 Semester Credits

Occupational therapy practice uses activities and tasks in achieving therapeutic goals in the treatment and rehabilitation of persons with occupational performance dysfunction resulting from disease or disability. Instruction in activities and tasks used in therapy to facilitate communication: develop relationships; increase self-esteem and assess and develop specific sensory, motor, psychological, social, and cognitive skills for learning, organizing work, and solving problems.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I, or concurrent enrollment, and departmental approval.

OTAT-1320 Fundamentals of Developmental

Disabilities

02 Semester Credits

Overview of developmental disabilities including physical and psychosocial conditions commonly referred to and treated by occupational therapists.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): OTAT-1300 Occupational Therapy Principles, and departmental approval.

**OTAT-1330 Techniques in Developmental Disabilities
03 Semester Credits**

Application of occupational therapy skills and techniques used in treatment programs planned for persons with developmental disabilities.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): OTAT-1310 Task Analysis, and departmental approval.

**OTAT-1420 Fundamentals of Psychosocial Dysfunction
02 Semester Credits**

Overview of psychosocial issues and psychiatric diagnoses in mental health and other clinical settings commonly referred to occupational therapy for treatment. Focuses on signs, symptoms and effects that mental illness and psychosocial issues have on an individual's life tasks and roles.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): PSY-2020 Life Span Development or concurrent enrollment, and OTAT-1320 Fundamentals of Developmental Disabilities.

**OTAT-1430 Techniques in Psychosocial Dysfunction
03 Semester Credits**

Designed to familiarize student with a variety of therapeutic techniques, processes, and programming used by occupational therapists treating individuals with psychosocial dysfunction. Emphasis on self awareness and group dynamics relevant to clinical settings serving clients with psychological and psychiatric disorders.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): OTAT-1330 Techniques in Developmental Disabilities, and departmental approval.

**OTAT-1850 Practicum I
02 Semester Credits**

Under supervision of assigned agency personnel, students apply knowledge, skills and techniques learned in concurrent OTAT courses and weekly discussion seminar. Assignment to agencies includes traditional and non-traditional settings servicing clients with developmental disabilities.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 105 hrs./semester.

Seminar: 15 hrs./semester.

Prerequisite(s): OTAT-1310 Task Analysis, and departmental approval.

**OTAT-1860 Practicum II
02 Semester Credits**

Under supervision of assigned agency personnel, students apply knowledge, skills and techniques learned in concurrent OTAT courses and weekly discussion seminar. Assignment to agencies includes traditional and non-

traditional settings serving clients with psychosocial dysfunctions.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 105 hours per semester.

Seminar: 15 hours per semester.

Prerequisite(s): PSY-2020 Life Span Development or concurrent enrollment, and departmental approval.

**OTAT-1980 Therapeutic Use of Self
02 Semester Credits**

The student will learn the art of relating to others through experiential activities, self-assessments and role playing activities to gain practical experience in initiating and responding to communications with a flexible, authentic and confident approach

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

**OTAT-2320 Fundamentals of Physical Dysfunction
04 Semester Credits**

Overview of physical disabilities including physical and psychosocial conditions commonly referred to and treated by occupational therapist. Presented within a developmental frame of reference covering adult through old age.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PTAT-1300 Functional Anatomy, OTAT-1420 Fundamentals of Psychosocial Dysfunction, and OTAT-1430 Techniques in Psychosocial Dysfunction.

**OTAT-2330 Techniques in Physical Disabilities
04 Semester Credits**

Overview of occupational therapy treatment strategies and techniques for physically disabled adults from late adolescence to the end of life. Emphasis on current, authentic and effective occupational therapy practice.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): PTAT-1300 Functional Anatomy, and OTAT-1430 Techniques in Psychosocial Dysfunction.

**OTAT-2340 Occupational Therapy Issues
03 Semester Credits**

Capstone course in Occupational Therapy Assisting. Integrates knowledge and skills acquired in academic work and field practice placements to clarify role and function of Certified Occupational Therapy Assistant; evolving issues, concepts and responsibility to professional organizations; credentialing process; research; continuing education and public relations. Role of COTA as activities director.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): OTAT-2330 Techniques in Physical Disabilities, or concurrent enrollment.

OTAT-2860 Practicum III

02 Semester Credits

Under supervision of assigned agency personnel, students apply knowledge, skills and techniques learned in concurrent OTAT courses and weekly discussion seminar. Assignments to health care agencies include, but are not limited to hospitals, nursing homes, and rehabilitation centers serving adult and/or geriatric populations with physical conditions referred to occupational therapy.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 105 hrs./semester.

Seminar: 15 hrs./semester.

Prerequisite(s): OTAT-1860 Practicum II, and departmental approval.

OTAT-2940 Field Experience

03 Semester Credits

Students assigned to two consecutive 8-week full-time field placements under supervision of licensed occupational therapists. Provides student opportunities to apply principles and techniques learned in previous courses to actual treatment situations in preparation for entry level practice.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 576 hours per semester.

Prerequisite(s): OTAT-2320 Fundamentals of Physical Dysfunction, OTAT-2330 Techniques in Physical Disabilities, OTAT-2860 Practicum III, and departmental approval.

OPTICAL TECHNOLOGY - OPT

OPT-1310 Theoretical Optics I

02 Semester Credits

Study of the history of light, geometric optics, modern lens theory and construction as it relates to finishing, surfacing, and dispensing of eyewear.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to program.

OPT-1320 Theoretical Optics II

02 Semester Credits

Study of theories of light, geometric laws of refraction, modern lens theory, and construction as it relates to finishing, surfacing, and dispensing of complex and special lens types. Includes calculation of refractive errors, corrective methods and calculating American National Standards Institute (ANSI) standards for complex ophthalmic eyewear.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): OPT-1310 Theoretical Optics I.

OPT-1410 Mechanical Optics I

02 Semester Credits

Apply knowledge of the production flow, equipment use, and materials used in an optical finishing laboratory. Basic laboratory concepts and manipulative skills required to make a pair of single vision eyewear. Includes topics on laboratory safety, personal safety, application of machine and instrument maintenance.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): Departmental approval: admission to program.

OPT-1420 Mechanical Optics II

02 Semester Credits

Apply knowledge of the production flow, equipment use, and materials used in an optical finishing laboratory. Basic laboratory concepts and manipulative skills required to make a pair of multifocal vision eyewear. Includes topics on laboratory safety, personal safety, application of machine and instrument maintenance.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): OPT-1410 Mechanical Optics I.

OPT-1510 Optical Dispensing I

03 Semester Credits

Introduction, history, and development of modern opticianry, spectacles, fitting procedures. Principles of interpersonal relationships. Instruction in basic frame types and parts.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: admission to Optical Technology Program.

OPT-1520 Optical Dispensing II

03 Semester Credits

Verification of a prescription, ordering the correct absorptive or tinted lenses, basic frame markings and measurements, inserting into frame, and keeping accurate records for future use.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): OPT-1510 Optical Dispensing I.

OPT-1610 Contact Lens I

02 Semester Credits

Focuses on history of contact lenses, differences between hard and soft contact lenses, and physical and physiological properties of contact lenses.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to the program.

OPT-1620 Contact Lens II

03 Semester Credits

Principles of operation and design of instruments applicable to fitting of contact lenses. Optical principles and materials applicable to design processes and relationship to physical condition and structure of the eye in its abnormal state.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): OPT-1610 Contact Lens I.

OPT-1710 Introduction to Patient Care

03 Semester Credits

Introduction to basic ophthalmic patient care procedures, metric conversion, basic optics, lensometry, refraction, tonometry, ocular terminology and the fundamentals of microbial control.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval.

OPT-1720 Advanced Patient Care

03 Semester Credits

Study of skills that are important to an allied health professional in the field of Ophthalmology such as refraction, tonometry, depth perception, pupillary evaluation, and instrument maintenance. Designed to prepare the student to work within an Ophthalmological practice as well as pursue certification as an Ophthalmic Assistant.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): OPT-1710 Introduction to Patient Care.

OPT-1911 Ophthalmic Assisting Directed Practice

04 Semester Credits

Application of learned ophthalmic assisting techniques in a clinical setting. Emphasis on records keeping, preliminary examination of the eye, cleaning and disinfection of equipment, ophthalmic pharmacology, and professionalism.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed practice: 30 hours per week for the duration of 16 weeks.

Prerequisite(s): Concurrent enrollment in OPT-1720 Advanced Patient Care.

OPT-2500 Optical Business

02 Semester Credits

Apply knowledge of organizations, sales, inventory, hiring and supervision to write a business plan; interpret financial data; set sales goals; evaluate inventory control systems; use point of sale software; conduct and interview and respond to a subordinate.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

OPT-2650 License Review Spectacle

01 Semester Credit

Focus on key optical concepts as they relate to spectacles with in-depth look at theory, optical nomenclature, and

test domains outlined by American Board of Opticianry Exam.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

OPT-2660 License Review Contact Lens

01 Semester Credit

Focus on key optical concepts as they relate to contact lenses with in-depth look at theory, optical nomenclature, and test domains outlined by the National Contact Lens Exam.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

OPT-2670 Optical Development

02 Semester Credits

Focus on key industry updates as they relate to opticianry and the health care profession. Noted guest speakers in industry will discuss present day realities of opticianry and health care profession.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

OPT-2701 Refractometry

03 Semester Credits

Entry-level knowledge of theory and performance of refraction as it relates to human eye. Study of ocular structures, ametropia neutralization, astigmatism, objective and subjective refraction, anomalies of vision, and clinical refraction and retinoscopy.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): OPT-1710 Introduction to Patient Care, or departmental approval.

OPT-2750 Ophthalmic Third Party Insurance

01 Semester Credit

Specialized study of third party insurance as it relates to Ophthalmology and Optical Dispensing. Discussion of the interpretation of ophthalmic benefits and proper submission of claims form to ophthalmic third party insurance providers.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

OPT-2940 Optical Field Experience I

02 Semester Credits

Supervised field experience in an ophthalmic health care setting designed to emphasize role of dispensing optician. Students gain exposure to professional practice through direct supervision by a licensed optician. Expect students to demonstrate advancing assessment skills and assume more individual responsibility as member of an ophthalmic department.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 24 hours per week for 16 Weeks (384 hours per semester)

Prerequisite(s): Concurrent enrollment in OPT-2971 Optical Field Experience Seminar I.

OPT-2950 Optical Field Experience II

02 Semester Credits

Supervised field experience in a clinical ophthalmic setting designed to emphasize role of dispensing optician. Students assigned to clinical sites under direct supervision of licensed optician. Students take on advanced responsibilities and have more input into decision making process. Demonstrate advanced assessment skills in patient care and business management and assume more individual responsibility as member of optical team.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 24 hours per week for 16 Weeks (384 hours per semester)

Prerequisite(s): OPT-2940 Optical Field Experience I, and concurrent enrollment in OPT-2971 Optical Field Experience Seminar I.

OPT-2971 Optical Field Experience Seminar I

03 Semester Credits

Integrates concepts and knowledge gained from field experience rotations into total learning process. Focuses on patient and professional communication and lifelong learning. Discusses current issues.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 3 hours per week.

Prerequisite(s): Concurrent enrollment in OPT-2940 Optical Field Experience I.

OPT-2981 Optical Field Experience Seminar II

03 Semester Credits

Capstone course in Optical Technology. Integrates advanced concepts and knowledge gained from field experience into total learning process. Focus on organization of health care delivery system. Use of more advanced skills and management techniques, payroll, hiring, termination skills, and labor relations. Discussions on current issues included.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 3 hours per week.

Prerequisite(s): Concurrent enrollment in OPT-2950 Optical Field Experience II.

PARALEGAL STUDIES - PL

PL-1000 Introduction to Paralegal Profession

02 Semester Credits

Discussion of practical realities of legal field; special emphasis on legal status of paralegals and ethical constraints placed upon those involved in legal profession. Introduces specific paralegal skills, various legal settings, overview of U.S. legal system, and organization of typical law case. Students expected to begin professional development, including exploring employment opportunities and paralegal organizations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

PL-1010 Introduction to Legal Writing

02 Semester Credits

Introduces paralegal students to a systematic approach to legal writing, including grammar and word usage.

Categories of legal writing will include client letters, private documents, and pleadings.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

PL-1300 Civil Procedure

03 Semester Credits

Examine Rules of Courts which govern civil lawsuits, with emphasis on Ohio Rules of Civil Procedure. Analyze and apply rules pertaining to commencement of action, service, motion practice and discovery issues. Students begin portfolio of legal documents developed throughout program of study. Survey alternatives to litigation such as arbitration, negotiation, and mediation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I; and PL-1000 Introduction to Paralegal Profession or concurrent enrollment.

PL-1400 Basic Legal Research and Writing

03 Semester Credits

Introduction to skills essential to effective identification, analysis and research of legal issues. Students learn to formulate research plans that require efficient use of basic research tools to locate primary and secondary authority. Practice in accessing sources commonly used by state court system and drafting projects, such as in-house legal memorandum and opinion letter, consistent with professional standards of style and citation. Emphasis on validating research and quickly accessing statutory and case law.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): ENG-1010 College Composition I; and PL-1000 Introduction to Paralegal Profession or concurrent enrollment.

PL-1460 Workers' Compensation Law

03 Semester Credits

Study of Ohio Bureau of Workers' Compensation and Industrial Commission of Ohio, with emphasis on claims and procedures involving injured workers and benefits available. Preparation of forms to access compensation for injuries, employer defenses, and appeal procedures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BADM-2340 Human Resource Law and Application, or concurrent enrollment, or departmental approval: admission to Paralegal Studies program.

PL-1501 Law Office Technology**02 Semester Credits**

Introduction to specific computer software utilized in law offices including calendaring, billing, docketing and indexing programs. Involves using word processing, spreadsheet and data software to create and manage legal documents and files. Activities constructed to simulate law office experiences and tasks. Designed for student already conversant with basic functions of word processing, database management, and spreadsheet design. Focus on use of computers related to paralegal functions in timekeeping, docket control, litigation support, and case management.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or departmental approval: equivalent experience or skills.

PL-1600 Alternative Dispute Resolution**02 Semester Credits**

Description and overview of a variety of dispute resolution mechanisms, including litigation, voluntary arbitration, court-annexed or mandatory arbitration, negotiation, and mediation, in order to demonstrate their interrelationships and their use in the American legal system. Paralegal involvement will be discussed in the context of each of these techniques.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

PL-1700 Employment Law**03 Semester Credits**

Overview of laws governing the employment relationship. Specific attention is given to the laws that create the employment relationship, documentation of employment practices, and litigation of employment-related claims. The role of the paralegal in the employment litigation process is explored.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval and admission to the Paralegal Studies Program.

PL-1710 Immigration Law and Procedure**03 Semester Credits**

Introduces students to immigration law as an integral part of the administrative process affecting a multitude of socio-economic and geo-political disciplines in the United States and abroad. Reviews substantive immigration law and procedure as it relates to non-immigrants and immigrants.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1000 Introduction to Paralegal Profession.

PL-1720 Elder Law & Estate Planning**03 Semester Credits**

Introduction to the paralegal concepts and documents used in pre-death estate planning and issues in regards to the elderly. Wills, Trusts, Powers of Attorney, the unified

gift/estate tax, gifting options, Social Security, and the methods and advantages/disadvantages of avoiding probate. Covers the documentation regarding guardianship, living wills, and health care powers of attorney, along with medical and care options of the elderly, including Medicare options and Medicaid.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1000 Introduction to Paralegal Profession, or concurrent enrollment, and ENG-1010 College Composition I, or concurrent enrollment; or departmental approval: permission from program manager.

PL-2000 Law Office Administration**02 Semester Credits**

Fundamentals of law office management and organization. Includes basic principles and structure of management, employment opportunities for paralegal, accounting systems, marketing issues, administrative and substantive systems in law office, and law practice technology.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Departmental approval or admission to program.

PL-2030 Legal Nurse Consulting**02 Semester Credits**

Study of functions of Legal Nurse Consultant and exploration of career opportunities available. Focus on applicable principles of medical and legal ethics and how to apply them to professional situations.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

PL-2301 Torts and Evidence**04 Semester Credits**

Fundamental principles of tort law (personal injury, malpractice, intentional tort, and products liability) to explore paralegal responsibilities in trial setting. Students collect and prepare evidence according to Ohio and Federal rules of evidence.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2330 Advanced Medicolegal Research**03 Semester Credits**

Lexis, Medline, and Internet research. Emphasis on legal and medical resources using legal and medical databases on-line, including the internet. Focuses on medical research used in determining appropriate standards of care and medical research tools.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): PL-2030 Legal Nurse Consulting, and PL-1400 Basic Legal Research and Writing, or concurrent enrollment.

PL-2400 Computer Assisted Legal Research

03 Semester Credits

Explore the differences in techniques between traditional and electronic legal research. Compare on-line factual and legal research with traditional methods. Formulate inquiries, and process, compile and evaluate material from Lexis, Westlaw and Internet sources. Discuss e-discovery and prepare an appellate brief, using Ohio Citation format. *Lecture 02 hours. Laboratory 03 hours.*

Prerequisite(s): PL-1000 Introduction to Paralegal Profession and PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing or departmental approval.

PL-2410 Intellectual Property

03 Semester Credits

Overview of intellectual property, including review of basics of personal property law, contract law and how and why each relates to ownership and transfer of intellectual property. Examination of trade secrets, patents, trademarks and service marks, and copyrights. Discussion of what is protected, duration of protection, fair use doctrine, and theft of service statutes.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2420 Probate Law

03 Semester Credits

Survey common forms of estate administration with focus on study of Ohio Probate Code relating to post-mortem estate administration. Define procedure for estate administration including discovery and determination of assets, appointment of fiduciary, taxation and transfer of property from decedent to beneficiaries. Define modes of property ownership.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2430 Medical Record Review and Analysis

04 Semester Credits

Study of production and preparation of medical record summaries. Focus on performance of investigative functions and witness preparation. Includes identifying standards of care; accessing, interpreting, and summarizing medical records; and interviewing clients, medical witnesses and experts. Lab component offers variety of computer and professional experience. Continued development of professional portfolio.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): PL-2301 Torts and Evidence or concurrent enrollment; and PL-2330 Advanced Medicolegal Research or concurrent enrollment.

PL-2440 Business Transactions

03 Semester Credits

Introduction to the laws that structure various business relationships such as agency, contracts, bailments, sales,

secured transactions and commercial paper. Utilization of appropriate forms to structure such relationships.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2460 Business Organizations

03 Semester Credits

Introduction to various business entities including sole proprietorships, partnerships, corporations, and licensed professional associations. Drafting of partnership agreements and incorporation documents. Introduction to tax consideration and Securities and Exchange Commission ramifications.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure or concurrent enrollment, and PL-1400 Basic Legal Research and Writing or concurrent enrollment.

PL-2510 Juvenile Law

02 Semester Credits

Designed to train students to effectively assist the juvenile law practitioner. Topics covered include abuse-neglect-dependency; juvenile delinquency; custody, support, and visitation issues; and paternity. The student will learn the basics of Ohio juvenile law, and how to analyze juvenile issues. Students will survey and discuss current and ongoing juvenile law-related issues of importance and concern.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure.

PL-2520 Debtor/Creditor Law

03 Semester Credits

Study of basic legal principles governing rights and duties of debtors and creditors. Introduction to the Law of Bankruptcy, specifically Chapters 7, 11 and 13 of the United States Bankruptcy Code and applicable Ohio law. Preparation of bankruptcy petitions, related schedules and documents needed for initial filing of petitions. Debt counseling protection, compromise and collection techniques including garnishment, foreclosure and attachment of personal property explored.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, and PL-1400 Basic Legal Research and Writing.

PL-2530 Marketing and Management for the Legal Nurse Consultant**01 Semester Credit**

Development of skills necessary to be independent consultant. Focus on marketing techniques, client development, case management, billing, promotional tools, and tax implications for legal nurse consultant.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, PL-2430 Medical Record Review and Analysis or concurrent enrollment.

PL-2540 Family Law**03 Semester Credits**

Basic principles and trends in Family Law including marriage, annulment, dissolution, divorce, child support, child custody, visitation, paternity, surrogacy and adoption. Emphasis on ethical issues, drafting of appropriate documents, preparing discovery, court proceedings, computer-assisted calculations, and conducting interviews to obtain sensitive client information.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure.

PL-2560 Advanced Litigation**03 Semester Credits**

Preparation of case for litigation using creation of trial notebook and mock trial. Students gather, draft, organize and summarize trial documents and prepare for courtroom demonstration of litigation process.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1300 Civil Procedure, PL-1400 Basic Legal Research and Writing, and PL-2301 Torts and Evidence.

PL-2851 Paralegal Practicum**01 Semester Credit**

Provides supervised work experience in law firm or other legal setting. Student obtains actual work experience by performing paralegal duties under direct supervision of attorney and/or paralegal.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 10 hours per week.

Prerequisite(s): Concurrent enrollment in PL-2990 Paralegal Capstone, and departmental approval: completion of all required courses and completion of all program requirements.

PL-2990 Paralegal Capstone**02 Semester Credits**

Capstone course in Paralegal Studies. Students will discuss experiences gained from practical experience. Review of major skills developed during paralegal program. Completion of portfolio, review of ethics of the profession.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: completion of all required courses and completion of all program requirements.

PHARMACY TECHNOLOGY - PHM**PHM-1300 Introduction to Pharmacy Practice****03 Semester Credits**

Overview of fundamentals of pharmacy practice including technician's role in drug distribution in various settings; and pharmacy abbreviations and terminology, history, management, organizations, information resources, regulations, law and ethics, and basic job search skills.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

PHM-1350 Pharmacy Practice I**03 Semester Credits**

Overview of fundamentals of pharmacy practice in various practice settings with respect to safe and accurate preparation and distribution of sterile and non-sterile topical and parenteral medications. Students learn the technician's role in drug preparation, drug packaging, and drug labeling.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval: admission to program.

PHM-1360 Pharmacy Practice II**03 Semester Credits**

Fundamentals of pharmacy practice including technician's role in drug distribution in community, home health care, nursing home, and alternative practice settings. Focuses on oral and topical dosage forms including handling, preparation, packaging, labeling, and distribution.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): PHM-1350 Pharmacy Practice I, or departmental approval.

PHM-1450 Pharmacology and Therapeutic Principles I**03 Semester Credits**

Overview of fundamentals of pharmacology including drug classification, brand and generic drug nomenclature, common drug therapy associated with various disease states, drug indications, side effects, and parameters for safe drug usage.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to program.

PHM-1460 Pharmacology and Therapeutic Principles II**03 Semester Credits**

Fundamentals of pharmacology including drug classification, brand and generic drug nomenclature, common drug therapy associated with various disease states, drug indications, side effects, and parameters for safe drug usage.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PHM-1450 Pharmacology and Therapeutic Principles I, or departmental approval.

PHM-1860 Pharmacy Technology Practicum I
03 Semester Credits

Supervised practical field experience designed to emphasize role of technician in various traditional practice settings. Students assigned to practicum training sites and work under direct supervision of registered pharmacists and certified pharmacy technicians to gain exposure to professional practices.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): PHM-1300 Introduction to Pharmacy Practice, PHM-1350 Pharmacy Practice I, PHM-1450 Pharmacology and Therapeutic Principles I, and departmental approval: site assignments.

PHM-2080 Pharmacy Technician Examination Review
01 Semester Credit

Global review of pharmacy practice, pharmacy law, pharmacology, compounding, and calculations. Test taking skills and registration procedure covered. Special focus on exam content outline topics to assist student preparing to take certification examinations for pharmacy technicians.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

PHM-2701 Current Topics in Pharmacy Practice
04 Semester Credits

Capstone course in Pharmacy Technology. Current topics and changes in practice of pharmacy detailed. Among topics discussed: current advances in medications; changing role of pharmacist and pharmacy technician; review of pharmaceutical calculations, substance abuse, biotechnology, AIDS and other communicable diseases; current health issues facing men, women, and children of diverse cultures; drug approval process; critical thinking and problem solving in pharmacy practice; consumer awareness of natural products including current information on herbal products, medication errors, and current status of automation in pharmacy.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PHM-1350 Pharmacy Practice I, PHM-1360 Pharmacy Practice II, PHM-1860 Pharmacy Technology Practicum I, and departmental approval.

PHM-2860 Pharmacy Technology Practicum II
03 Semester Credits

Supervised practical field experience. Emphasis on role of technician in various traditional and non-traditional practice settings. Students assigned to practicum training sites and work under direct supervision of registered pharmacists and certified pharmacy technicians to gain exposure to professional pharmacy practices. Students expected to assume more responsibility and work with less individualized attention.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): PHM-1860 Pharmacy Technology Practicum I, PHM-2701 Current Topics in Pharmacy Practice or concurrent enrollment, and departmental approval.

PHM-2870 Pharmacy Technology Practicum III
03 Semester Credits

Supervised practical field experience. For students who need additional experience in IV admixture, sterile technique, or other advanced pharmacy practice.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): PHM-2860 Pharmacy Technology Practicum II, and departmental approval.

PHILOSOPHY - PHIL

PHIL-1000 Critical Thinking
03 Semester Credits

Principles of critical and creative thinking with emphasis on practical applications using theories to improve the quality of mindfulness. Incorporation of skillful analysis, assessment and communication in the problem-solving process.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-1010 Introduction to Philosophy
03 Semester Credits

Basic concepts, reasoning skills, and attitudes employed in philosophical inquiry. Study and analysis of perennial philosophical problems through critical examination of writings of classical and contemporary philosophers. Preparation for further work in philosophy and any area of learning requiring reasoned views.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OAH045

PHIL-101H Honors Introduction to Philosophy**03 Semester Credits**

Introduction to basic concepts, reasoning skills, and attitudes employed in philosophical inquiry. Study and analysis of perennial philosophical problems through critical examination of writings of classical and contemporary philosophers. Emphasis on an in-depth study of primary sources within philosophical tradition. Prepares students for further work in philosophy and any area of learning requiring reasoned views.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval or eligibility for Honors English.

PHIL-1020 Introduction to Logic**03 Semester Credits**

Introduction to evaluation of arguments. Concentration on basic principles of formal logic and application to evaluation of arguments. Explores notions of implication and proof and use of modern techniques of analysis including logical symbolism.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-179H Honors Contract in Philosophy**01 Semester Credit**

Honors Contract complements and exceeds the requirements and objectives for an existing PHIL 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions. May be repeated for a maximum of six credits of different topics.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level honors course in Philosophy, whose instructor approves the Honors Contract.

PHIL-2010 Comparative World Religions**03 Semester Credits**

Study of origin, nature, and meaning of major world religions: Judaism, Christianity, Islam, Buddhism, Hinduism and Confucianism.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-2020 Ethics**03 Semester Credits**

Study of systems and problems of human conduct with applications to moral problems and decisions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

OAN Approved: OAH046

PHIL-202H Honors Ethics**03 Semester Credits**

Study of systems and problems of human conduct with applications to moral problems and decisions. Emphasis on an in-depth study of primary sources within philosophical tradition. Prepares students for further work in philosophy, applied ethics, and any area of learning requiring reasoned views.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG 1010 College Composition I.

PHIL-2031 Philosophy of Science**03 Semester Credits**

Study of concept formation in science and examination of patterns of scientific investigation and method. Treatment of concepts such as observation, classification, causality, law of nature, explanation, and theory.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-2040 Philosophy of Art**03 Semester Credits**

Examination of types of art theories, their implications for art interpretation, art criticism, creative activity of artist, and appreciation of art objects.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-2050 Bioethics**03 Semester Credits**

Study and analysis of moral philosophy as applied to issues in healthcare with emphasis on developing students' abilities to correctly identify moral problems and defend their moral judgments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-205H Honors Bioethics**03 Semester Credits**

An in-depth study and analysis of moral philosophy as applied to issues in health and life sciences with emphasis on developing students' abilities to correctly identify moral problems and defend their moral judgments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-101H Honors College Composition I ; or departmental approval.

PHIL-2060 Business Ethics**03 Semester Credits**

Application of moral philosophy including ethical theories and moral principles to issues in business and other organizations with an emphasis on developing the student's ability to identify and analyze ethical issues.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PHIL-208H Honors Social Justice

03 Semester Credits

An advanced intensive study of systems and problems of human conduct with practical application and decision making components. Emphasis on an in-depth study of primary sources within philosophical tradition. Prepares students for further work in philosophy, applied ethics, and any area of learning requiring reasoned views. Participants will select a theme that addresses questions of social justice and civic responsibility. Mentor supported, student-directed study, seminars and excursions will serve as basis for examination of the chosen theme. Students will create theme-related project proposals for eventual presentation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-101H Honors College Composition I, or departmental approval: 3.5 GPA.

PHYSICAL EDUCATION - PE

PE-1000 Personal Fitness

02 Semester Credits

Introduction to techniques, principles and benefits of personal conditioning program including flexibility, cardiovascular fitness and muscle endurance training.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

PE-1010 Personal Strength Development

02 Semester Credits

Activities which incorporate the five components of fitness: body composition, cardiovascular fitness, muscle strength, muscle endurance and flexibility with emphasis on strength training.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

PE-1020 Weight Training

01 Semester Credit

Basic instruction in theory of using weights to improve muscular fitness and in fundamentals of correct lifting techniques using dumbbells, nautilus, universal and/or various other machines.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1031 Introduction to Lifetime Fitness I

02 Semester Credits

Participation in basic total wellness/fitness education program. Through instruction, supervision, and evaluation, student will exercise with increased knowledge on how to develop a safe fitness program for his/her goals and needs.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

PE-1041 Introduction to Lifetime Fitness II

01 Semester Credit

Designed for students who have completed PE-1031 Introduction to Lifetime Fitness I; PE-1000 Personal Fitness; or PE-1010 Personal Strength Development and desire a more individualized total wellness/fitness education program.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): PE-1031 Introduction to Lifetime Fitness I, or PE-1000 Personal Fitness, or PE-1010 Personal Strength Development.

PE-1051 Adapted Lifetime Fitness

01 Semester Credit

Designed for student who desires to participate in individualized circuit training program and has physical limitations which prevent participation in individualized current fitness courses. Students must be registered with the Access Office to enroll. Contact campus director for physical education.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval: must be registered with Access Office.

PE-1060 Cardio-Fitness

01 Semester Credit

Cardio/respiratory conditioning class, consisting of flexibility and aerobic conditioning exercises and use of variety of training machines.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1070 Walking/Jogging

01 Semester Credit

Introduces walking/jogging activities including warm-up, stretching, and cool down.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1080 Low Impact Aerobics

01 Semester Credit

Instruction and practice in aerobic dance movements which involve minimum stress of joints. Includes exercises to improve cardiovascular fitness, flexibility, and muscle tone.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1100 Step Aerobics

01 Semester Credit

Instruction and practice in aerobic dance movements utilizing a step with emphasis on individual performance levels including techniques to improve cardiovascular fitness, flexibility, muscle tone and strength.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1110 Intermediate Step Aerobics**01 Semester Credit**

Emphasizes aerobic dance movements utilizing a step with emphasis on individual performance levels. Students should have step aerobics experience and knowledge of basic step movements and terminology.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval: comparable skills.

PE-1120 Adapted Physical Education**01 Semester Credit**

Individualized program for students with temporary or permanent physical limitations. Contact campus director of physical education for registration procedures.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): Must be registered with Access Office.

PE-1130 Archery**01 Semester Credit**

Instruction and practice for skill development, safety procedures, equipment care and value as a lifetime activity.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1140 Bowling**01 Semester Credit**

Instruction and participation in bowling fundamental skills course.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1150 Golf for Beginners**01 Semester Credit**

Instruction in and development of skills, fundamentals of the swing and physical skills of the game.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1160 Golf for Players**01 Semester Credit**

Advanced class in golf emphasizing playing game of golf and improving already learned skills. Most of class time scheduled off-campus.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): PE-1150 Golf for Beginners, or departmental approval: comparable skill.

PE-1190 Self-Defense I**01 Semester Credit**

Instruction, practice and skill development in basic self-defense. Students gain appreciation of fitness and self-discipline.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1215 Snowboarding**01 Semester Credit**

Development of basic skills of snowboarding, selection and use of equipment, terminology, and safety rules. Extra fee required for off-site snowboarding.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1220 Skiing**01 Semester Credit**

Development of basic skiing techniques and safety practices and appreciation of skiing as lifetime activity. Extra fee required for off-site skiing.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1230 Tennis for Beginners**01 Semester Credit**

Instruction, practice and skill development of tennis as lifetime activity. Scoring, rules and etiquette of tennis included.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1240 Tennis for Players**01 Semester Credit**

Instruction, practice and skill development in tennis with emphasis on Singles and Doubles competition. Additional instruction and drills of beginners skills included.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): PE-1230 Tennis for Beginners, or departmental approval.

PE-1260 Basketball**01 Semester Credit**

Introduction to fundamentals of basketball for men and women. Rules, safety, and basketball skills stressed.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1270 Softball**01 Semester Credit**

Instruction and participation in softball for men and women. Basic softball skills, rules and game strategy stressed.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1280 Soccer**01 Semester Credit**

Instruction and participation in soccer for men and women. Basic soccer skills, rules and game strategy stressed.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1290 Volleyball

01 Semester Credit

For men and women. Instruction and practice of volleyball skills including safety procedures, competitive experience, and appreciation of volleyball as lifetime activity.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1300 Aqua Fitness

01 Semester Credit

Non-swimming water fitness class. Includes various types of water workouts in both the shallow and deep ends, cardio and toning components. Swimming skills not required.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1310 Shallow Water Exercise

01 Semester Credit

Shallow water exercises to improve aerobic fitness, muscle tone and flexibility.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1320 Deep Water Exercise

01 Semester Credit

Cardiovascular exercises, muscle toning, strengthening, and flexibility in deep water. Requires students to be comfortable in deep water wearing a buoyancy device.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1330 Swimming I

01 Semester Credit

Fundamental swimming skills for non-swimmers and shallow water swimmers including water adjustment, floating, breathing techniques, basic swimming strokes, and water safety skills.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1340 Swimming II

01 Semester Credit

Swimming for the intermediate and advanced swimmer in the development and/or refinement of a wide variety of swimming strokes. Includes front and back crawl, backstroke, breaststroke, butterfly, sidestroke, elementary backstroke, underwater swimming, turns, and diving. Also includes water safety skills, deep water entry, and treading water.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): PE-1330 Swimming I, or departmental approval: equivalent skill.

PE-1370 Cardio Kickboxing

01 Semester Credit

Instruction and practice in a kickboxing/martial arts fitness based program. Emphasis on proper technique,

safe kicks, punches, and combinations. Kickboxing movements performed to improve aerobic endurance, flexibility, balance, muscle strength and tone. Instruction and practice with kickboxing bags and gloves included.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1380 Aqua Kickboxing

01 Semester Credit

Traditional kickboxing moves, adapted for the water, conducted in both the shallow and deep ends. Swimming skill is NOT required.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1390 Horsemanship

01 Semester Credit

Instruction and practice for skill in the basics of horseback riding at the walk, trot, canter and trail riding. Basic knowledge of riding equipment, the tack (western), parts and health management of the horse.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1400 Whitewater Rafting

02 Semester Credits

Introduction to outdoor activities including instruction and participation in specific areas such as whitewater rafting, canoeing, or sailing. Includes lecture sessions in preparation for outdoor experience. Activity may include weekend and/or overnight participation. Additional laboratory fees vary according to activity. Check course schedule for specific information.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Departmental approval.

PE-1410 Backpacking

02 Semester Credits

Introduction to outdoor activities, including instruction and participation in specific areas such as backpacking, hiking and orienteering. Includes lecture sessions in preparation for the outdoor experience. Weekend and/or overnight participation required.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Departmental approval: physical fitness test.

PE-1421 Camping

02 Semester Credits

Fundamental class in camping designed to develop basic knowledge and skills pertinent to safe and enjoyable camping. Activity may include weekend and/or overnight participation. Additional laboratory fees vary according to activity. Check current credit schedule for specific information.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): None.

PE-1430 Physical Relaxation Techniques**01 Semester Credit**

Introduces the student to basic physical techniques of relaxation including breathing, Jon Kabut-Zinn's body scan method, active and passive meditation. Includes awareness of body tension and stressors.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1440 Yoga**01 Semester Credit**

Emphasis on basic Hatha yoga practice consisting of pranayama (breath control), asanas (postures), vinyasa (flow of postures), mantra (chanting), mudra (hand positioning) and dhyana (meditation) to benefit and bring balance to the body, mind, and spirit. Introduction to basic yoga philosophies also included.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1450 Intermediate Yoga**01 Semester Credit**

Emphasis on various Hatha yoga practices at the intermediate and advanced levels. The class will consist of intermediate and advanced pranayama (breath control), asanas (postures), vinyasa (flow of postures), mantra (chanting), and dhyana (meditation) to benefit and bring balance to the body, mind, and spirit.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1460 Pilates**01 Semester Credit**

Emphasis on proper breathing, core strength, kinesthetic awareness, mind over muscle, strengthening of opposing muscle groups and disease prevention as it relates to stress.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

PE-1470 Core Strength**01 Semester Credit**

Focuses on strengthening the core muscles of the trunk of the body and improving balance. Consists of a warm up, conditioning segment using body weight, stability balls, and other core conditioning equipment, and concludes with a stretching segment.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1480 Yoga and Pilates**01 Semester Credit**

Provides instruction, information, and exploration about the mind-body systems of yoga and pilates, with emphasis on physical exercise, relaxation, mindfulness, and self-awareness.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1490 Tai Chi**01 Semester Credits**

Explores the traditional Chinese exercise of Tai Chi. Provides for the development of basic skills and techniques that lead toward an integration of mind and body to enhance fitness, health, and well-being. Focus is on the Yang style of 24 forms.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1510 Beginner Middle Eastern Belly Dance**01 Semester Credit**

Emphasizes beginner and advanced beginner Middle Eastern belly dance movements and patterns. Provides an overall body workout to improve and enhance cardiovascular fitness, muscle tone, coordination, balance and self-esteem. No prior experience is required.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1520 Intermediate Middle Eastern Belly Dance**01 Semester Credit**

This course will focus on Middle Eastern belly dance movements, patterns, and combinations at the intermediate and advanced levels. Emphasis will be on movements that enhance coordination, balance, flexibility, muscle tone, cardiorespiratory fitness, and self-confidence. Prior experience in Middle Eastern belly dance is required.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): PE-1510 Beginner Middle Eastern Belly Dance or departmental approval.

PE-1530 Zumba**01 Semester Credit**

Zumba is an aerobic exercise program with choreographed movement routines, featuring fast and slow Latin rhythms. Emphasizes cardiorespiratory fitness, muscular strength and toning, and proper, effective, and safe Zumba techniques at the beginner/advanced beginner level.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-1540 Body Toning**01 Semester Credits**

Instruction, practice, and participation in group exercise class consisting of total-body muscular strength and endurance exercises using a variety of equipment and methods.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): None.

PE-2000 Lifeguard Training

02 Semester Credits

Minimum skills training to qualify individuals as nonsurf lifeguard with certification from the American Red Cross in Lifeguard, First Aid and CPR for the Professional Rescuer.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Departmental approval: swimming test defined by Red Cross.

PE-2010 Lifeguard Instructor

02 Semester Credits

Focuses on teaching skills contained in the American Red Cross Lifeguarding, First Aid, CPR for the Professional Rescuer and Community Water Safety courses with American Red Cross certification as a Lifeguard and CPR for Professional Rescuer Instructor.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Departmental approval: 17 years of age by end of class; demonstrate knowledge of lifeguarding and CPR skills.

PE-2020 Water Safety Instructor

02 Semester Credits

Instruction in teaching all skills and courses in the American Red Cross Learn-To-Swim program, Parent and Child Aquatics, Water Safety Courses, and Longfellow's Whale Tales. Includes American Red Cross certification.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): Must be 16 years of age by end of course.

Demonstrate the ability to perform the following swimming skills consistent with Stroke Performance charts, level 4: front crawl, back crawl, breaststroke, elementary backstroke and side stroke-25 yards each and butterfly 15 yards.

PE-2100 Personal Training

02 Semester Credits

Preparation to pass typical national examination for certification as a personal trainer. Covers anatomy, physiology, biomechanics, strength and fitness theory, performance and weight management, exercise programming, and developing a client base.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): PE-1000 Personal Fitness, or departmental approval: based on comparable experience. (First Aid and CPR certifications are required by most personal training accrediting bodies.)

Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

PSCI-101L Astronomy Laboratory

01 Semester Credit

[This course is cross-listed as PHYS-101L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on measurements, optics, telescopes, the sun, constellations, and other related astronomy topics. Laboratory activities complement and enrich related lecture course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): PSCI-1010 Astronomy or concurrent enrollment.

PSCI-1020 Chemistry

03 Semester Credits

[This course is cross-listed as CHEM-1000. Credit can only be earned once for either course.] Survey of chemistry as related to environment, health and nutrition, and application of chemical knowledge that affect quality of life. Basic concepts and applications of chemistry: consumer chemistry, periodicity, acids and bases, medicines and drugs, pollution and conservation. Intended for non-science majors. To fulfill laboratory science requirement, student should enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990-Language Fundamentals II; or departmental approval.

PSCI-102L Chemistry Laboratory

01 Semester Credit

[This course is cross-listed as CHEM-100L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on measurements, separation and synthesis methods, reaction rates, water analysis, household chemistry, forensic and environmental issues, and other related chemistry topics. Laboratory activities complement and enrich related lecture course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): PSCI-1020 Chemistry or concurrent enrollment.

PHYSICAL SCIENCE - PSCI

PSCI-1010 Astronomy

03 Semester Credits

[This course is cross-listed as PHYS-1010. Credit can only be earned once for either course.] Survey of astronomy. History of astronomy, planets, asteroids and comets, the sun, stars, galaxies, and cosmology. Contemporary issues and developments in astronomy and space science.

PSCI-1030 Earth**03 Semester Credits**

[This course is cross-listed as ESCI-1030. Credit can only be earned once for either course.] Survey of geology of Earth and its impact on the environment. Earth's structure and composition, earthquakes, plate tectonics, hydrologic cycle, weather, resources and energy alternatives, and current related issues. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

PSCI-103L Earth Laboratory**01 Semester Credit**

[This course is cross-listed as ESCI-103L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on rocks and minerals, soils, weather, plate tectonics, energy and may include other related earth science activities. Laboratory activities complement and enrich related lecture course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): PSCI-1030 Earth or concurrent enrollment.

**PHYSICAL THERAPIST ASSISTING
TECHNOLOGY - PTAT**
**PTAT-1100 Introduction to Physical Therapist Assisting
02 Semester Credits**

History and principles of physical therapy. Role, responsibilities and supervision of the physical therapist assistant. Survey of physical therapy interventions and services. Legal, ethical responsibilities and Professional Behaviors relating to physical therapy service. Communication, cultural diversity, and introduction to medical record documentation.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and MA-1020 Medical Terminology I; and departmental approval.

PTAT-1300 Functional Anatomy**04 Semester Credits**

Study of anatomy and function of human body to include head, neck, shoulder girdle, trunk, and upper and lower extremities. Study of motion of human body as basic to application of exercise with emphasis on study of functional problems for analysis of body movement.

Lecture 03 hour. Laboratory 03 hours.

Prerequisite(s): MA-1020 Medical Terminology I, and BIO-2331 Anatomy and Physiology I, and departmental approval

PTAT-1311 Fundamentals of Physical Therapy**02 Semester Credits**

Fundamental procedures and theories for practice of physical therapy. Posture, movement, body mechanics,

lifting and moving patients. Gait, assistive devices, bandaging, massage and complimentary therapies. Wheelchair features, maintenance and mobility. Professional behaviors and the therapeutic relationship.

Lecture 02 hour. Laboratory 02 hours.

Prerequisite(s): PTAT-1300 Functional Anatomy, and HTEC-1000 Introduction to Patient Care; and departmental approval: admission to program

**PTAT-1320 Introduction to Therapeutic Exercise
02 Semester Credits**

Introduction to the principles of therapeutic exercise including passive, active, active assistive and resistive exercise. Differentiation of strength, flexibility and stretching exercises.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): HTEC-1000 Introduction to Patient Care; and concurrent enrollment in PTAT-1300 Functional Anatomy, and departmental approval.

**PTAT-1401 Clinical Pathophysiology
02 Semester Credits**

Introduction to medical conditions commonly encountered in the practice of physical therapy that affect such systems as the Endocrine, Immune, Peripheral Vascular and Vestibular systems. Discuss health and disease and process of inflammation and repair of tissue and mechanisms of pain.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): PTAT-1300 Functional Anatomy, and BIO-2341 Anatomy and Physiology II, and departmental approval PTAT-1311 Fundamentals of Physical Therapy.

**PTAT-1411 Physical Therapy Procedures
03 Semester Credits**

Physical Therapy procedures, emphasizing treatment utilizing physical agents. Use and application of modalities that emanate from electromagnetic and acoustic spectra.

Lecture 02 hour. Laboratory 03 hours.

Prerequisite(s): PTAT-1100 Introduction to Physical Therapist Assisting PTAT-1300 Functional Anatomy, and PHYS-1210 College Physics I, and PTAT-1311 Fundamentals of Physical Therapy, and departmental approval

**PTAT-1420 Therapeutic Exercise
03 Semester Credits**

Physical therapy techniques and principles utilized in therapeutic exercise.

Lecture 02 hour. Laboratory 03 hours.

Prerequisite(s): PTAT-1300 Functional Anatomy, and PTAT-1311 Fundamentals of Physical Therapy, and PTAT-1320 Introduction to Therapeutic Exercise, and departmental approval.

PTAT-2200 Physical Therapy in Acute Care Setting **02 Semester Credits**

The procedures, equipment and common pathologies encountered in the practice of physical therapy in acute care. Burns, wound care, isolation techniques, infection control and transplantation as well as cardiac and respiratory pathologies and the physical therapy techniques for intervention.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): PTAT-1311 Fundamentals of Physical Therapy, and departmental approval

PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures **04 Semester Credits**

Physical therapy techniques and procedures required for long term adult rehabilitation in selected diagnosis and impairments.

Lecture 03 hour. Laboratory 03 hours.

Prerequisite(s): BIO-2341 Anatomy and Physiology II, and PTAT-1401 Clinical Pathophysiology, and PTAT-1420 Therapeutic Exercise, and departmental approval

PTAT-2310 Pediatric Physical Therapy **02 Semester Credits**

Special considerations of the physical therapy approaches, role, and procedures regarding infants and children. Typical fetal and postnatal growth and development. Examination of wide range of disease and disabilities affecting infants and children, and physical therapy skills necessary for interaction and treatment of this patient population.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): BIO-2341 Anatomy and Physiology II, and PTAT-1401 Clinical Pathophysiology, and PTAT-1411 Physical Therapy Procedures, and PTAT-1420 Therapeutic Exercise, and departmental approval.

PTAT-2330 Geriatric Physical Therapy **02 Semester Credits**

Special considerations of physical therapy approaches, role, and procedures regarding the older adult population. Statistics, myths, and legislation regarding aging population. Normal aging and its effects and implications for treatment, wellness, and psychosocial implications.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures, and concurrent enrollment in PTAT-1401 Clinical Pathophysiology, and departmental approval

PTAT-2341 Psychosocial Issues in Physical Therapy **02 Semester Credits**

Psychosocial issues for physical therapy including diagnosis and treatment of common mental illnesses, abuse, and therapeutic use of self.

Lecture 02 hour. Laboratory 00 hours.

Prerequisite(s): PTAT-1100 Introduction to Physical Therapist Assisting; and PSY-1010 General Psychology or concurrent enrollment; or PSY-101H Honors General Psychology, or concurrent enrollment

PTAT-2840 Clinical Practicum I **02 Semester Credits**

Capstone course in Physical Therapist Assisting Technology. Application of learned physical therapy techniques in a clinical setting.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Practicum: 225 hours per semester (37.5 hours per week for 6 weeks).

Prerequisite(s): PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures, and concurrent enrollment in PTAT-2330 Geriatric Physical Therapy; and concurrent enrollment in PTAT-2970 Practicum Seminar, and departmental approval.

PTAT-2850 Clinical Practicum II **02 Semester Credits**

Capstone course in Physical Therapist Assisting Technology. Application of learned physical therapy techniques in a clinical setting.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Clinical Practicum: 300 hours per semester (37.5 hours per week for 8 weeks).

Prerequisite(s): PTAT-2840 Clinical Practicum I, and concurrent enrollment in PTAT-2970 Practicum Seminar, or concurrent enrollment departmental approval.

PTAT-2940 Field Experience I **01 Semester Credit**

Application of learned physical therapy techniques in a clinical setting.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 160 hours per semester.

Prerequisite(s): PTAT-1410 Physical Therapy Procedures, or concurrent enrollment, and PTAT-1420 Therapeutic Exercise, or concurrent enrollment, and departmental approval.

PTAT-2970 Practicum Seminar **01 Semester Credits**

Integration of field experience with didactic material and preparation of entry into workforce.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Seminar: 15 hours per semester.

Prerequisite(s): PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures; and concurrent enrollment in PTAT-2840 Clinical Practicum I, and concurrent enrollment in PTAT-2850 Clinical Practicum II, and departmental approval

PHYSICIAN ASSISTANT - PA

PA-1200 History and Physical Exam Techniques I 03 Semester Credits

Introduction to the skills required for patient-practitioner communication and development of therapeutic interpersonal relations including obtaining and recording the complete medical history and portions of the physical exam. Emphasis on cultural diversity influences in the therapeutic relations, patient counseling and/or patient education techniques and proper documentation of historical and physical findings.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval: admission to program.

PA-1210 History and Physical Exam Techniques II 03 Semester Credits

Instruction, study, and practice of skills required for conduction of a complete physical examination using appropriate equipment, techniques and accurate medical terminology to document findings. Includes instruction to identify and discuss normal and abnormal anatomical structures, body system physiology, pathological conditions, common symptoms of disorders, clinical findings and provide appropriate patient education.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1222 Basic Technical & Surgical Skills 02 Semester Credits

Presentation and discussion of fundamental technical and surgical clinical skills required of Physician Assistant in diagnostic and therapeutic management of primary care and surgical patients. Focus on basic bedside procedures.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1232 Advanced Technical & Surgical Skills 02 Semester Credits

Presentation, discussion, and practice of advanced surgical skills in the preparation of patients for surgery, and to assist physicians in performing procedures in surgery, the emergency room, hospital, office and clinic.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1240 Clinical Anatomy 04 Semester Credits

Study of clinical anatomy of the human body with emphasis on important anatomical landmarks required in the physical evaluation of the patient and anatomical relationships of structures to each other. Includes anatomical components of body systems, blood and nerve supply to organs and body regions. Common pathological

processes and topical landmarks related to common surgical procedures are covered.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I, or concurrent enrollment.

PA-1250 Clinical Pharmacology 04 Semester Credits

Application of the principles of pharmacodynamics to calculate drug doses, write and interpret legal and accurate prescriptions for medical conditions.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1350 Electrocardiography 01 Semester Credits

Designed to allow students to recognize and interpret electrocardiography (EKG) tracings and their clinical significance, apply ACLS treatment protocols; and educate and communicate with patients and other health care professionals utilizing appropriate medical terminology as it relates to the cardiac conduction system. Technique of 12-lead EKG recording and interpretation presented.

Lecture 00 hour. Laboratory 02 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1360 Adjuncts to Diagnosis 03 Semester Credits

Introduction to diagnostic and therapeutic procedures utilized to evaluate pulmonary, abdominal, cardiac, skeletal, genitourinary, neurological, and vascular systems. Includes laboratory, radiography, and respiratory methods and techniques, their indications and general principles of interpretation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician Assistant program.

PA-1370 Behavioral Medicine 02 Semester Credits

Focus on the detection and treatment of psychological symptoms and syndromes including stress, abuse (domestic, child and elder), violence, substance abuse through basic patient counseling, assessment of risk factors, pharmaceutical therapy, patient education and/or appropriate patient referrals. Emphasis on cultural sensitivity and strategies to identify and ease patient reaction to illness (psychological/organic) and end of life issues with the application of those strategies to overcome resistance, encourage therapeutic cooperation and assistance in decreasing health risk behaviors.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1450 The Physician Assistant Profession and Health Care Issues

02 Semester Credits

Introduction to the Physician Assistant profession, health care system, patient education, and issues encountered in primary-care and surgical practice settings. Includes discussion of health maintenance and disease prevention measures; psychiatric/social problems and their management; use of community resources; cultural diversity; home health, inner city, and rural health care; and current issues in health care.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval, or admission to the Physician Assistant program.

PA-1550 The Physician Assistant Profession

01 Semester Credit

Introduction to the PA profession, including information about the history of the profession, AAPA Code of Ethics, credentialing and recertification requirements of the PA profession, the PA professional's role in health care delivery and reimbursement systems, relationship with the supervising physician and other health care professional; information about legislation and governing bodies that affect the profession. Use of appropriate referral sources when patient management is outside scope of PA practice.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician Assistant program.

PA-1590 Introduction to Clinical Medicine

02 Semester Credits

Presentation of medical problems and diseases encountered in primary care practice. Etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management, and potential complications discussed. Differential diagnosis of related or similar disease processes included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician's Assistant program.

PA-1600 Clinical Medicine I

04 Semester Credits

Presentation of medical problems and diseases encountered in primary care practice. Etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management, and potential complications discussed. Differential diagnosis of related or similar disease processes included.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician Assistant program.

PA-1610 Clinical Medicine II

04 Semester Credits

Presentation of medical problems and diseases encountered in primary care practice, emphasizing musculoskeletal, neurological, dermatological,

genitourinary and gastrointestinal systems. Etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management and potential complications provide framework for lecture and discussion. Differential diagnosis of related and similar diseases included.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician Assistant program.

PA-1620 Clinical Medicine III

04 Semester Credits

Based on age appropriate and culturally diverse patient clinical presentations, recognize, describe and research disease processes based on signs and symptoms; develop a differential diagnosis, identify and utilize appropriate diagnostic tools to formulate a diagnosis and therapeutic plan for disorders of the obstetrics, gynecology, and pediatrics systems.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician Assistant program.

PA-2302 Patient Management

02 Semester Credits

This course will provide the student with instruction in patient management by providing the tools for selection and interpretation of diagnostic and therapeutic procedures, correlation of medical history and physical examination data, and integration of diagnostic skills through simulated case studies and problem-solving activities.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): PA-1610 Clinical Medicine II, or concurrent enrollment; and PA-1250 Clinical Pharmacology, and admission to the Physician Assistant program.

PA-2501 Emergency Medicine

04 Semester Credits

Provides an overview of potentially life-threatening illnesses and injuries encountered in emergency situations or in the critically ill patient. Provides the physician assistant student with the essentials of assessment and management for the initial evaluation, stabilization, assessment, management and treatment, patient education, disposition and follow-up of an acutely ill patient requiring expeditious medical, surgical, or psychiatric attention, including awareness of special considerations and cultural diversity of patient populations.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1250 Clinical Pharmacology, and PA-1610 Clinical Medicine II, or concurrent enrollment; and admission to the Physician Assistant Program.

PA-2611 Preparation for Practice

02 Semester Credits

Self-assess knowledge and skills to determine gaps, develop a learning plan and prepare for the Physician Assistant National Certification Exam (PANCE). Plan, develop and present health education to the community and develop a plan for life-long learning.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Physician Assistant program; and PA-1600 Clinical Medicine I, and PA-1610 Clinical Medicine II, and PA-1620 Clinical Medicine III.

PA-2910 Directed Practice I: Primary Care

01 Semester Credit

Supervised practical application in clinical health care settings designed to emphasize the role of Physician Assistant to the primary care physician. Students assigned to clinical rotations and under direct supervision of medical personnel gain exposure to professional practice.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 160 hours per rotation.

Prerequisite(s): Concurrent enrollment in PA-2972 Field Experience Seminar I, or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2915 Directed Practice I: Surgery

01 Semester Credit

Supervised practical application in clinical surgical health care settings designed to emphasize the role of the physician assistant to the surgeon. Students assigned to clinical rotations, under direct supervision of medical personnel gain exposure to professional practice.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 160 hours.

Prerequisite(s): Concurrent enrollment in PA-2972 Field Experience Seminar I, or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2920 Directed Practice II: Primary Care

01 Semester Credit

Supervised practical application in clinical health care settings designed to emphasize the role of Physician Assistant to the primary care physician. Students assigned to clinical rotations and under direct supervision of medical personnel gain exposure to professional practice.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 160 hours per rotation.

Prerequisite(s): Concurrent enrollment in PA-2972 Field Experience Seminar I, or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2925 Directed Practice II: Surgery

01 Semester Credit

Supervised practical application in clinical surgical health care settings designed to emphasize the role of physician assistant to the surgeon. Students assigned to clinical

rotations, under direct supervision of medical personnel gain exposure to professional practice.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 160 hours.

Prerequisite(s): Concurrent enrollment in PA-2972 Field Experience Seminar I, or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2942 Field Experience I

04 Semester Credits

Supervised field experience in clinical health care settings designed to emphasize the role of Physician Assistant to primary care physicians. Students assigned to clinical rotations, under direct supervision of medical personnel, gain exposure to professional practice. Students at the beginning of clinical training should demonstrate beginning assessment skills. As clinical experience continues, the student should demonstrate intermediate to advanced skills, and assume increased individual responsibility as member of medical team. Modular courses PA-294A, PA-294B, PA-294C, and PA-294D together will also meet requirements for this course.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Field experience: 640 hours (160 hours per rotation.)

Prerequisite(s): PA-2302 Patient Management and concurrent enrollment in PA-2972 Field Experience Seminar I or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2952 Field Experience II

04 Semester Credits

Supervised field experience in clinical health care settings designed to emphasize the role of Physician Assistant to primary care physicians. Students assigned to clinical rotations, under direct supervision of medical personnel, gain exposure to professional practice. Students at the beginning of clinical training should demonstrate beginning assessment skills. As clinical experience continues, the student should demonstrate intermediate to advanced skills, and assume increased individual responsibility as member of medical team. Modular courses PA-295A, PA-295B, PA-295C, and PA-295D together will also meet requirements for this course.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 640 hours (160 hours per rotation.)

Prerequisite(s): PA-2302 Patient Management and concurrent enrollment in PA-2972 Field Experience Seminar I, or concurrent enrollment in PA-2982 Field Experience Seminar II, or departmental approval.

PA-2960 Field Experience III

02 Semester Credits

Supervised field experience in clinical healthcare settings designed to emphasize the role of the Physician Assistant to primary care physicians. Students assigned to clinical rotations, under direct supervision of medical personnel, gain exposure to professional practice and clinical assessment skills.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Field Experience: 320 hours (160 hours per rotation)

Prerequisite(s): PA-2942 Field Experience I.

PA-2972 Field Experience Seminar I

01 Semester Credits

Pre- and post- rotational on campus seminars. Integrates concepts and knowledge gained from field experience rotations into total learning process. Focus on patient and professional communication, various professional practice issues and topics, and life-long learning. Other discussions on current issues included.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Seminar: 15 hours per semester.

Prerequisite(s): PA-1620 Clinical Medicine III.

PA-2982 Field Experience Seminar II

01 Semester Credits

Post-rotational on-campus seminars. Integrates concepts and knowledge gained from field experience rotations into total learning process. Focus on patient and professional communication, various professional practice issues and topics, and lifelong learning.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Seminar: 15 hours per semester.

Prerequisite(s): Concurrent enrollment in PA-2942 Field Experience I, or PA-2952 Field Experience II, or concurrent enrollment.

PHYSICS - PHYS

PHYS-1010 Astronomy

03 Semester Credits

[This course is cross-listed as PSCI-1010. Credit can only be earned once for either course.] Survey of astronomy. History of astronomy, planets, asteroids and comets, the sun, stars, galaxies, and cosmology. Contemporary issues and developments in astronomy and space science. Intended for non-science majors. To fulfill laboratory science requirements, students should enroll in related laboratory course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

PHYS-101L Astronomy Laboratory

01 Semester Credits

[This course is cross-listed as PSCI-101L. Credit can only be earned once for either course.] Intended for non-science majors. Exercises on measurements, optics, telescopes, the sun, constellations, and other related astronomy topics. Laboratory activities complement and enrich related lecture course.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): PHYS-1010 Astronomy or concurrent enrollment.

PHYS-1050 Everyday Physics

02 Semester Credits

Explores application of various fields of physics to everyday living. Household applications, sports applications and other applications discussed. Some modern physics topics introduced.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and MATH-0960 Beginning Algebra II, or MATH-0980 Intensified Beginning Algebra.

PHYS-1210 College Physics I

04 Semester Credits

Kinematics, vectors, and Newtonian mechanics (forces and motion, gravitation, energy, momentum, rotational motion, simple harmonic motion), fluids, heat, and thermodynamics. Emphasis on problem-solving using algebra.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1280 Advanced Intermediate Algebra or departmental approval.

OAN Approved: OSC014

PHYS-1220 College Physics II

04 Semester Credits

Electricity, magnetism, waves, sound, light, special relativity, atomic and nuclear physics.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): PHYS-1210 College Physics I.

OAN Approved: OSC015

PHYS-1300 Physics of Optical Materials

04 Semester Credits

Study of basic structure and properties of materials related to opticianry. Includes structure, density, conductivity, and effects of mechanical forces on materials. Special emphasis given to nature and theory of light and application to ophthalmic optics. Demonstrations by use of optical bench, blackboard optics, and other instruments used to facilitate understanding of how light functions.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1060 Survey of Mathematics.

PHYS-2250 Radiographic Physics and Quality Control
04 Semester Credits

Study of x-ray circuitry, x-ray generators, mobile radiographic equipment, radiographic quality control, and use of automatic exposure devices. Includes laboratory application of quality assurance testing tools.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): RADT-1350 Radiographic Technique, and departmental approval: admission to Radiography program.

PHYS-2310 General Physics I

05 Semester Credits

Physics for students majoring in science or engineering. Kinematics and dynamics in one, two, and three dimensions. Conservation laws (energy, momentum, angular momentum); gravitation; simple harmonic motion; heat and thermodynamics. Emphasis on problem-solving using algebra and calculus.

Lecture 04 hours. Laboratory 03 hours.

Prerequisite(s): MATH-1610 Calculus I, or departmental approval.

OAN Approved: OSC016

PHYS-2320 General Physics II

05 Semester Credits

Second semester course for students majoring in science or engineering. Electricity and magnetism; light and optics; waves in elastic media; sound.

Lecture 04 hours. Laboratory 03 hours.

Prerequisite(s): PHYS-2310 General Physics I, and MATH-1620 Calculus II; or departmental approval.

OAN Approved: OSC017

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY - PST

PST-1010 Career Opportunities in Horticulture

01 Semester Credit

Elective course providing an introduction to the diverse careers available in horticulture.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

PST-1300 Horticultural Botany

03 Semester Credits

[This course is cross-listed as BIO-1300. Credit can only be earned once for either course.]

Plant terminology, taxonomy, histology, anatomy, morphology, and physiology are examined. Emphasis on horticultural practices, plant growth principles, and cultural requirements for plant growth.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): ENG-0990 Language Fundamentals II, or eligibility for ENG-1010 College Composition I.

PST-1311 Deciduous Woody Landscape Plants

03 Semester Credits

Covers the correct identification, cultural requirements, potential, and correct uses of deciduous trees and shrubs in the landscape.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants

03 Semester Credits

Covers the cultural requirements, growth habits, potential, and correct landscape uses of herbaceous annuals, perennials, hardy bulbs, groundcovers, and evergreen trees and shrubs.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PST-1330 Plant Propagation

02 Semester Credits

Introduction to the techniques used to create new food and ornamental plant crops.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): None.

PST-1351 Plant Production

03 Semester Credits

Exploration of sexual and asexual propagation of ornamental and food plant materials. Emphasis on basic greenhouse, garden center, small farm, and nursery operations from off season planning, crop timing, pest management, marketing, production, harvesting, and selling.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): None.

PST-1400 Garden Center and Nursery Management

03 Semester Credits

An in-depth study of the management skills needed to successfully operate a garden center or a wholesale nursery growing establishment, including management of employees, inventory, suppliers, clients, and legal and regulatory environment. Emphasis placed on ensuring management practices are environmentally sustainable and use the most current technologies available.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

PST-1411 Equipment Operations and Safety

02 Semester Credits

An overview of common horticultural hand tools, power tools, and large equipment. Emphasis on safe operation with hands on practice and basic preventative maintenance on each machine.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): None.

PST-1420 Landscape Practices

03 Semester Credits

Study of and practical experience in proper techniques of landscape installation and maintenance. Specifications of American Nursery Association standards emphasized.

Diagnosis and resolution of plant problems considered.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

PST-1431 Graphics for Landscape Design and Construction

02 Semester Credits

Foundation and preparatory course for graphic communication processes and methods used in landscape design and landscape construction. Production and applications of a variety of drawing types and the tools and techniques used to produce them. Types of drawings studied will include; plan, section, elevation, isometric, perspective and freehand sketching. Other graphic techniques studied will include color rendering and construction detailing.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): None.

PST-1441 Introduction to Landscape Design

03 Semester Credits

Foundation course for landscape design. Basic principles, elements and processes of design and their relationship to landscape design. Aesthetic, environmental and programmatic systems analysis and the development of basic site and landscape design projects. Preparation of various design drawing types and models provides exposure to design theories applicable to the use of landform, vegetation, water and structural landscape elements.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): PST-1431 Graphics for Landscape Design and Construction.

PST-1450 Landscape Design - CAD

03 Semester Credits

An introduction to the software's operational components and the methods and procedures to develop the types of drawings typically used for landscape design/sales presentations and construction implementation at a residential scale, from initial file set-up to printing the completed drawings. The software programs utilized in this class are Dynascape design, color and sketch 3D.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): PST-1431 Graphics for Landscape Design and Construction and IT-1010 Introduction to Microcomputer Applications.

PST-1510 Landscape Contracting

03 Semester Credits

In depth study of the two major sides of landscape contracting. Study of landscape maintenance contracting business including turf-grass maintenance, fertilization

services, mulching, pruning, bed maintenance, spring and fall clean up, bed edging, aerating, snow and ice removal, and other value added services. Study of landscape construction and installation contracting including the estimation process, construction documentation, permits and regulations, subcontracting, equipment and material logistics, job site management, project management, and basic landscape construction practices.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-1000 level or higher.

PST-1600 Irrigation and Drainage

02 Semester Credits

Provides an operational knowledge of the theory, design, installation, and maintenance of landscape irrigation and drainage systems.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): Eligibility for MATH-1000 level or higher.

PST-2300 Interior Foliage Identification & Culture

02 Semester Credits

Identification, culture, and uses of tropical and other interior plants in the interior plantscape, workplace, and home.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants, or PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants.

PST-2310 Soil Technology

03 Semester Credits

Understanding the critical roles soil plays in horticulture, agriculture, and construction. Emphasis on soil testing, analysis, and building healthier soils.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): CHEM-1000 Everyday Chemistry; or PSCI-1020 Chemistry; and eligibility for ENG-1010 College Composition I.

PST-2320 Plant Pest Diagnostics

04 Semester Credits

In depth study of Integrated Pest Management tactics as used in the green industry to provide a sustainable approach to care of plants in the agricultural, nursery, and landscape environments.

Lecture 02 hours. Laboratory 06 hours.

Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants or PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants; or departmental approval.

PST-2360 Landscape Design

03 Semester Credits

Capstone course for the plant science landscape contracting option incorporating proficiencies demonstrated from prior courses. Emphasis on landscape design theories including site conditions and customer needs. Includes techniques to move from preliminary sketch to final design.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants, and PST-1321 Evergreens, Groundcovers, and Herbaceous Landscape Plants.

PST-2370 Introduction to Turfgrass

02 Semester Credits

Study of lawn maintenance and installation, including fertilization, spraying, mowing, irrigation, selection and establishment, weed and pest identification, and diagnosis of disorders as pertains to commercial, residential, and municipal applications.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants.

PST-2380 Arboriculture

02 Semester Credits

Study of the tree-care industry, including fertilization, spraying, pruning, bracing and cabling, equipment operation, climbing techniques, safe work practices, diagnosis of plant disorders. Arborists' interaction with client are also studied.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): PST-1311 Deciduous Woody Landscape Plants, or departmental approval.

PST-2431 Planting Design

03 Semester Credits

Emphasis on the design relationships of plants to their optimum and intended environments. Basic and advanced planting design principles and techniques that address the aesthetic, environmental and engineering uses of plant material. Preparation of various design project drawing types and a personal plant palette including woody and herbaceous materials for more complex landscape design solutions.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): PST-1441 Introduction to Landscape Design, or departmental approval : Faculty may require samples of previous work to determine skill level.

PST-2440 Design IV - Advanced Landscape Design

03 Semester Credits

Capstone course for the landscape design/build curriculum. Synthesis of the proficiencies gained and demonstrated in prior courses. Design methodologies and solutions to complex design programs. The regulatory and technical requirements involved in complex design issues. Advanced methods of client interview, governmental codes and environmental regulations, budget development, presentation and sales of landscape projects.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): PST-2431 Planting Design.

PST-2450 Crop Cycles and Alternative Growing Methods

03 Semester Credits

Students will learn how to bring a food or ornamental crop to market for profit. Determination of which crops will have the highest margin and at what time of year that margin is highest. Non-traditional methods of raising food and ornamental crops and season extension. Applied practice will focus on using high-tunnels, grow pots, slabs, hydroponic, aeroponic, aquaponic growing systems, pot-in-pot, and other soil-less methods.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): PST-1351 Plant Production.

PST-2950 Field Experience

03 Semester Credits

Field experience in student's occupational objectives in plant science, landscaping and/or horticulture. Student and employer follow training agreement as developed by student, employer and supervising faculty.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): Departmental approval: satisfactory completion of coursework deemed sufficient to prepare the student for entry level work in chosen work area.

POLITICAL SCIENCE - POL

POL-1010 American National Government
03 Semester Credits

Nature, purpose, theories and forms of government of the United States at national level. Relationships between structure, function and process. Dynamics of political change, including role and significance of U.S. Constitution. Current issues of American public policy.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): None.
OAN Approved: OSS011

POL-101H Honors American National Government
03 Semester Credits

Nature, purpose, and function of government of the United States at the national level. Relationships between structure, function and process. Dynamics of political change, including role and significance of U.S. Constitution. Current issues of American public policy with a focus on the analysis and interpretation of primary source materials.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ENG-1010 College Composition I, or eligibility for ENG-101H Honors College Composition I.
OAN Approved: OSS011

POL-1020 State and Local Government
03 Semester Credits

Examination of state and local governments within federal system, intergovernmental relations, metropolitan problems, dynamics of electoral process, including impacts of public policy decisions on individual lives. Several policy areas may be studied.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): None.
OAN Approved: OSS014

POL-1040 Introduction to Peace and Conflict Studies
03 Semester Credits

Introduction to conflict analysis and conflict resolution. Provide solid foundation for further inquiry and application. Examines definitions of conflict and diverse views of its resolution. Exploration of contemporary studies of individual behavior and social life as they relate to the origins of conflict and violent and peaceful social change. Specific conflict situations approached through models of sociocultural dynamics.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ENG-1010 College Composition I, or concurrent enrollment; or eligibility for ENG-101H Honors College Composition I, or departmental approval: permission from instructor.

POL-179H Honors Contract in Political Science
01 Semester Credit

Honors Contract complements and exceeds the requirements and objectives for an existing POL 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions.
Lecture 01 hour. Laboratory 00 hours.
Prerequisite(s): Must be taken concurrently with a 1000-level honors course in Political Science, whose instructor approves the Honors Contract.

POL-2030 Comparative Politics
03 Semester Credits

Examination of selected industrialized democracies including the United Kingdom, France and Germany; transitional states including Russia; the theocratic regime in Iran; and one developing country from either Central America, Africa or Asia. Explores the ideological underpinnings, economic systems and most salient political and social issues of each of these case-study states.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government.
OAN Approved: OSS013

POL-2040 Conflict Resolution Skills
03 Semester Credits

Skills-based course in conflict management and resolution. Increase awareness, develop skills, and gain knowledge of constructive conflict management processes and approaches. Explore causes of conflict, conflict styles, and interpersonal conflict communication skills such as assertiveness and active listening. Introduce constructive conflict management approaches including negotiation, mediation, nonviolent action and Alternative Dispute Resolution approaches.
Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): ENG-1010 College Composition I; or departmental approval.

POL-2050 Study Abroad in Peace and Conflict Resolution

03 Semester Credits

Study abroad opportunity covering theory and practice of Conflict Resolution and Peace Studies. Students will have an opportunity to meet with decision makers across fields while experiencing the rich culture of the country/countries. Students will begin to understand issues from multiple cultural perspectives, enhance their intercultural communication and adjustment skills, and analyze conflict resolution efforts and their impact at multiple levels. Basic language and cultural instruction will be included along with excursions to areas of interest. Requires participation in a travel abroad experience. Additional costs required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and POL-1040 Introduction to Peace and Conflict Studies, and POL-2040 Conflict Resolution Skills, and departmental approval instructor permission required.

POL-2060 Political Systems of Africa

03 Semester Credits

Comparative discussion of selected topics in Africa with particular focus on the interrelationship between internal and external affairs. Examination of colonial policies, party systems, interest groups and modes of development. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): POL-1010 American National Government is recommended.

POL-2070 International Relations

03 Semester Credits

Study of International Relations. Explores how individuals, Nation-States, non-governmental and international organizations interact with one another. Emphasis on major subfields of security and political economy.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government.

OAN Approved: OSS012

POL-2100 Constitutional Law

03 Semester Credits

The origins and development of American constitutional and legal system. Emphasizes the structure and role of Supreme Court in constitutional interpretation and major decisions concerning important areas of litigation. Major areas of emphasis include federalism, separation of powers, civil liberties, civil rights, and rights of the criminally accused. Historical and current court cases discussed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and POL-1010 American National Government.

POL-2110 Terrorism and Counterterrorism

03 Semester Credits

Interdisciplinary examination of terrorism within its historical context. Examine select acts of global and domestic terrorism. Analyze terrorism and its social, economic, religious and ideological dimensions. Includes how democratic nations should respond to terrorism and terrorism in the future.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

POL-2120 Women and Politics

03 Semester Credits

[This course is cross-listed as WST-2120. Credit can only be earned once for either course.] This course examines women's political life in the United States. Women's involvement in all aspects of the political process will be addressed. Substantive areas include women and democracy, their political participation, and role in governing institutions. The course also includes discussion on the struggle for equal rights and issues of public policy. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): POL-1010 American National Government, or HIST-1020 History of Civilization II, or HIST-1520 United States History Since 1877.

POL-2130 Politics of Race

03 Semester Credits

Analysis of minority group interactions within the American political system. Focus on the strategies employed both within and outside government to achieve political ideals and their roles and political behaviors in national, state, and local levels

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or POL-1010 American National Government.

POL-2140 Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning

03 Semester Credits

This course will integrate theories and skills in Peace Studies and Conflict Management with service learning. Students will gain practical experience, serve their community, and engage with issues surrounding the promotion of social justice, social service, or conflict management at local, regional, national, or international levels. A minimum of 40 hours service learning required over the course of the semester.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): POL-1040 Introduction to Peace and Conflict Studies, and POL-2040 Conflict Resolution Skills.

PRACTICAL NURSING - PNUR

PNUR-1300 Introduction to Patient Care 02 Semester Credits

Principles and practices of basic nursing care to individuals with selected health deviations. Designed for those students without hands-on patient care experience. Students that are current STNAs with a minimum of 1 year experience that successfully pass written and skills competency testing may qualify to have this course waived.

Lecture 01 hour. Laboratory 03 hours.

Other Required Hours: Laboratory: On-campus 03 hours.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program; and BIO-1050 Human Biology or concurrent enrollment; and BIO-105L Human Biology Laboratory or concurrent enrollment; ENG-1010 College Composition I, or concurrent enrollment; MATH-1141 Applied Algebra and Mathematical Reasoning, or concurrent enrollment, and concurrent enrollment in PNUR-1321 Nursing Management of Adults I.

PNUR-1321 Nursing Management of Adults I 07 Semester Credits

Use of the nursing process and scientific principles in providing care for patients with various health problems, the body's response to illness and stress, and its adaptations. Identifies common nursing interventions to meet basic needs of the adult patient.

Lecture 04 hours. Laboratory 09 hours.

Other Required Hours: Laboratory: On-campus and Clinical: 09 hours.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program, and BIO-1050 Human Biology, or concurrent enrollment; and BIO-105L Human Biology Laboratory or concurrent enrollment; and ENG-1010 College Composition I, or concurrent enrollment; and MATH-1141 Applied Algebra and Mathematical Reasoning, or concurrent enrollment.

PNUR-1330 Nursing Management of Adults II 08 Semester Credits

Focuses on care of adults with acute and recurring medical and surgical conditions. Students develop skills in problem-solving through use of the nursing process as applied to individual situations, with goal of providing safe, competent, and standard nursing interventions to individual adult patient.

Lecture 04 hours. Laboratory 12 hours.

Other Required Hours: Laboratory: On-campus and Clinical: 12 hours.

Prerequisite(s): PNUR-1321 Nursing Management of Adults I and PNUR-1300 Introduction to Patient Care, BIO-1050 Human Biology or concurrent enrollment; and BIO-105L Human Biology Laboratory or concurrent enrollment; and PSY-1010 General Psychology or concurrent enrollment, and departmental approval: admission to Practical Nursing Program.

PNUR-1341 Lifespan Nursing for the Practical Nurse 04 Semester Credits

Designed to provide nursing care to individuals with selected health deviations across the lifespan. Emphasis on nursing responsibility in assessment of normal and abnormal occurrences. Childbearing experience, nursing skills, and measures related primarily to ill newborn, children and adolescents considered in relation to entire family. Emotional and physical aspects incorporated. Provides opportunity for leadership in the adult health care setting, with multiple patients.

Lecture 02 hours. Laboratory 06 hours.

Other Required Hours: Laboratory: on-campus and clinical hours 06.

Prerequisite(s): PSY-2020 Life Span Development, or concurrent enrollment; and PNUR-1330 Nursing Management of Adults II and departmental approval.

PSYCHOLOGY - PSY

PSY-1010 General Psychology 03 Semester Credits

Scientific study of human behavior. Topics include the history of psychology, scientific methods, biological processes, sensation and perception, consciousness, learning, intelligence, human development, motivation and emotion, personality, abnormal behavior, social psychology and diversity.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I. OAN Approved: OSS0015

PSY-101H Honors General Psychology 03 Semester Credits

Examination of historical and conceptual foundations of modern psychology, its methodology and enduring issues within subdisciplines. Research basis of psychology and discussion of original source materials emphasized.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Completion of ENG-1010 College Composition I with B or higher or eligibility for ENG-101H Honors College Composition I, or psychology departmental approval.

OAN Approved: OSS0015

PSY-1050 Introduction to Industrial/Organizational Psychology 03 Semester Credits

Focuses on the application of research to the workplace and provides an overview of psychological principles as they relate to issues of industry and organizations. Topics include personnel selection, job analysis and design, job descriptions, training, motivational theories, job attitudes, performance appraisal, testing and assessment, teamwork, stress, workplace violence and U.S. employment laws related to personnel decisions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

PSY-1060 Cross-Cultural Competency for Health Care Providers**01 Semester Credit**

Focuses on cultural sensitivity, diversity awareness and multicultural communication skills for health care providers. Includes communicating with patients in ways that are culturally aware and sensitive. Practice communication skills using scenarios involving patients of diverse backgrounds.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, and DMS-1303 Introduction to Sonography, and DMS-1351 Patient Care Skills.

PSY-179H Honors Contract in Psychology**01 Semester Credit**

Honors Contract complements and exceeds the requirements and objectives for an existing PSY 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Psychology, whose instructor approves Honors Contract.

PSY-2040 Social Psychology**03 Semester Credits**

Social influence on the individual's ideas and behaviors; emphasis on issues such as attraction, prejudice, conformity and interpersonal communication.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

PSY-2090 Psychology of Human Sexuality**03 Semester Credits**

Examines the scientific study of Human Sexuality from a psychological perspective. Includes an introductory overview of the biological, psychosocial, and developmental perspectives of sexuality. Introduces the diversity of human sexual expression. Topics include sexual anatomy, sexual arousal, gender identity, sexual orientation, and sexual health.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

PSY-2010 Child Growth and Development**03 Semester Credits**

Study of human growth and development from conception through puberty. Emphasis on biological, cognitive, social and emotional development. Physiological and psychological processes examined.

Major developmental issues examined from diverse perspectives.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

OAN Approved: OSS045

PSY-201H Honors Child Growth and Development**03 Semester Credits**

The physical, intellectual, personal and social development of humans from conception through adolescence is examined from the perspective of multiple psychological theories. Basic and applied research in developmental psychology is emphasized.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-101H Honors General Psychology or PSY-1010 General Psychology with a grade of "B" or higher; or departmental approval.

PSY-2020 Life Span Development**04 Semester Credits**

Study of human growth and development throughout the life span. Emphasis on biological, cognitive, social and emotional development. Major issues examined from diverse perspectives.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

OAN Approved: OSS048

PSY-202H Honors Life Span Development**04 Semester Credits**

Study of human growth and development throughout the life span. Analysis and evaluation of major theories and research findings in the field of developmental psychology. Emphasis on biological, cognitive, social and emotional development. Examine the impact of diversity/culture on life span development. Appraise the major issues of life span development and the influence of diversity/culture. Students will analyze, appraise and apply the major developmental theories to everyday life scenarios. Students will construct an understanding of cross cultural development across the life span.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology with a grade of "B" or higher; or PSY-101H Honors General Psychology; and ENG-1010 College Composition I or ENG-101H Honors College Composition I.

PSY-2040 Social Psychology**03 Semester Credits**

Social influence on the individual's ideas and behaviors; emphasis on issues such as attraction, prejudice, conformity and interpersonal communication.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

OAN Approved: OSS016

PSY-2050 Psychology of Personality

03 Semester Credits

Scientific study of personality, including motivation and development. Normal and abnormal personality considered along with its clinical applications and relevance to business and industry.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

UAN Approved: OSS018

PSY-2060 Adolescent Psychology

03 Semester Credits

Examines human development from puberty to young adulthood from a variety of perspectives. Variations in development related to gender, social and cultural factors considered. Includes physical and sexual maturation; identity and self-image; family and peer relations; social, emotional and moral behavior; cognition and academic performance; work and leisure behavior; and transition to independence.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

UAN Approved: OSS046

PSY-2070 Behavior Modification

03 Semester Credits

Basic conditioning and learning principles emphasizing primary, social and token reinforcement. Applications to normal and abnormal behavior and uses in the home, school, work, hospital and correctional settings.

Implications and ethics of behavioral control examined.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

PSY-2080 Abnormal Psychology

03 Semester Credits

Descriptive survey of behavioral and psychological disorders. Topics include past and present views of abnormal behavior; diagnostic and assessment procedures; classification; and causes, prevention and remediation of disorders.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

UAN Approved: OSS017

PSY-2100 Introduction to Aging

03 Semester Credits

Overview of the psychological aspects of maturation. Consideration of biological, emotional, perceptual, cognitive and psychosocial conditions encountered in young, middle-aged and senior adults.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

UAN Approved: OSS047

PSY-2110 Educational Psychology

03 Semester Credits

Examines the psychological basis of teaching and learning. Topics include theories of development and learning, learner motivation, learner differences, instructional strategies and assessment. Effects of cultural, social, and emotional factors on educational processes are also examined. This course is a requirement of teacher education programs.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

UAN Approved: OED003

PSY-2120 Multicultural Health Psychology

03 Semester Credits

Exploration and study of current topics, research, and theory in the specialty of Health Psychology across many cultures. An overview of topics such as psychoneuroimmunology and health, the basic issues and processes. Examination of the connections between the mind and body and the impact of cognition, emotions and behavior (lifestyle choices) on the physiology of common acute and chronic illnesses and cultural influences.

Exploration of stress and coping styles with an emphasis on prevention and treatment. A survey of quality-of-life issues as created by health needs and resources available in the community for treatment.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

PSY-2150 Quantitative Methods in Behavioral Science

04 Semester Credits

Introduction to quantitative analysis of behavioral data. Application of descriptive and inferential statistics (includes correlation, t-test and ANOVA) and SPSS computer software to data presentation, hypothesis testing and design and interpretation of behavioral research

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): SOC-1010 Introductory Sociology or SOC-101H Honors Introductory Sociology or PSY-1010 General Psychology or PSY-101H Honors General Psychology - a 2000 level psychology course, and a sufficient score on math assessment tests; or departmental approval: previous Algebra II course in high school or college.

RADIOGRAPHY - RADT

RADT-1300 Fundamentals of Radiography

04 Semester Credits

Basic study of ionizing radiation relative to its nature, production, interaction with matter and effect on radiographic quality. Includes the fundamentals of radiation protection and image acquisition methods.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval: admission to program.

RADT-1350 Radiographic Technique

03 Semester Credits

Analysis and application of radiographic factors influencing the recording and visibility of radiographic image, considering both film screen and digital technology. Students required to conduct x-ray exposure experiments, under supervision, using standard energized equipment and digital equipment.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): RADT-1300 Fundamentals of Radiography, or departmental approval.

RADT-1400 Radiographic Positioning

03 Semester Credits

Introduction to and application of radiographic positioning for upper and lower extremities, chest, pelvis, abdomen, gastrointestinal and urinary systems including use of contrast media. Basic concepts of patient care and the role of the radiographer as a member of the health care team. Specific radiological patient care skills used in radiology practices. Discussion of legal issues and doctrines with introduction of medico-legal terminology. Special emphasis on the American Registry of Radiologic Technologists' Standards of Ethics.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): - Departmental approval: admission to program.

RADT-1410 Intermediate Radiographic Positioning

03 Semester Credits

Essentials of radiographic procedures involving cerebral and facial cranium, vertebral column, thoracic cage, and specific projections of upper extremity articulations. Techniques and positioning variations for trauma, pediatric, geriatric and age specific patients. Communication skills for patient-focused care, being mindful of standard precautions, and appropriate safety practices. Additional hours required for practicing radiographic positioning assignments under direct supervision of registered radiographer.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): RADT-1400 Radiographic Positioning, and departmental approval: admission to program.

RADT-1911 Clinical Radiography I

07 Semester Credits

Supervised sessions provide the student with practical experience to apply basic positioning and patient care

skills acquired in didactic studies. Selection of appropriate radiographic exposures and methods of radiation protection as they correlate to radiographic procedures. Clinical experience is gained through general diagnostic procedures, fluoroscopy, mobile radiography and emergency procedures using a competency based format in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 576 hours. This includes 16 hours of embedded lecture, delivered at clinical site. Total hours required 576.

Prerequisite(s): Departmental approval: admission to program.

RADT-191A Clinical Radiography I

06 Semester Credits

Supervised sessions provide the student with practical experience to apply basic positioning and patient care skills acquired in didactic studies. Selection of appropriate radiographic exposures and methods of radiation protection as they correlate to radiographic procedures. Clinical experience is gained through general diagnostic procedures, fluoroscopy, mobile radiography and emergency procedures using a competency based format in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 496 hours. This includes 16 hours of embedded lecture, delivered at clinical site. Total hours required 496.

Prerequisite(s): Departmental approval: admission to program.

RADT-191B Clinical Radiography I

01 Semester Credits

Supervised sessions provide the student with practical experience to apply basic positioning and patient care skills acquired in didactic studies. Selection of appropriate radiographic exposures and methods of radiation protection as they correlate to radiographic procedures. Clinical experience is gained through general diagnostic procedures, fluoroscopy, mobile radiography and emergency procedures using a competency based format in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 80 hours to be completed in the two week intersession.

Prerequisite(s): RADT-191A Clinical Radiography I, and departmental approval: admission to program.

RADT-191S Clinical Radiography I

05 Semester Credits

Supervised sessions provide the student with practical experience to apply basic positioning and patient care skills acquired in didactic studies. Selection of appropriate radiographic exposures and methods of radiation protection as they correlate to radiographic procedures. Clinical experience is gained through general diagnostic procedures, fluoroscopy, mobile radiography and emergency procedures using a competency based format in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed Practice: 375 hours. This includes 15 hours of embedded lecture, delivered at clinical site. Total hours required 375.

Prerequisite(s): Departmental approval: admission to program.

RADT-2350 Radiographic Pathology

03 Semester Credits

Study and identification of selected pathologic conditions. Manifestation of diseases of the human body and their radiographic appearance. Adjustment of techniques due to pathologic changes and best imaging procedures will be covered.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging, and RADT-1350 Radiographic Technique, or departmental approval.

RADT-2361 Interventional Radiography and Pharmacology

02 Semester Credits

Introduction to specialized imaging procedures of Interventional Radiography within Diagnostic Radiography. To provide individuals with knowledge and skills to effectively contribute as a member of specialized imaging teams. Apply basic concepts of pharmacology in Interventional Radiography.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging; and concurrent enrollment in RADT-2350 Radiographic Pathology; and departmental approval: admission to program.

RADT-2400 Imaging Systems

03 Semester Credits

Presentation of imaging systems and imaging modalities. Topics include conventional and digital fluoroscopy, image intensification, video-tape recorders, conventional tomography, computerized tomography, magnetic resonance and mammography.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in RADT-1350 Radiographic Technique.

RADT-2510 Fundamentals of Mammography

04 Semester Credits

Introduction to mammography, historical development, patient education and assessment. Anatomy, physiology

and pathology of the breast, including benign and malignant conditions, stages of breast cancer and treatment options. Basic and advanced positioning techniques including special cases such as the post-surgical breast. Case studies and mammography image critique. Study of physics of mammography, instrumentation equipment and quality assurance emphasizing image processing quality control. Modular courses RADT-251A, RADT-251B, RADT-251C and RADT-251D together will also meet requirements for this course.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): Admission to the Mammography program, or departmental approval.

RADT-251A Introduction to Mammography

01 Semester Credits

Introduction to mammography, historical development, patient education and assessment.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Admission to Mammography program, or departmental approval.

RADT-251B Anatomy and Pathology of the Breast

01 Semester Credits

Anatomy, physiology and pathology of the breast, including benign and malignant conditions, stages of breast cancer and treatment options.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Admission to Mammography program, or departmental approval.

RADT-251C Positioning Techniques for Breast Imaging

01 Semester Credits

Basic and advanced positioning techniques including special cases such as the post surgical breast. Case studies and mammography image critique.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Admission to Mammography program, or departmental approval.

RADT-251D Physics of Mammography

01 Semester Credits

Study of physics of mammography, instrumentation equipment and quality assurance emphasizing image processing quality control.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Admission to Mammography program, or departmental approval.

RADT-2520 Advanced Procedures in Mammography 04 Semester Credits

Study of sterile technique, infection control, interventional procedures and OSHA regulations. Ultrasound breast imaging, including anatomy on ultrasound images.

Ultrasound physics and ultrasound imaged pathologies. Comprehensive Registry Review. Standards of care, legal issues, and MQSA guidelines for the Breast Center addressed. Accreditation process and preparation for FDA/MQSA inspection. Modular courses RADT-252A, RADT-252B, RADT-252C and RADT-252D together will also meet requirements for this course.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): RADT-2510 Fundamentals of Mammography; or RADT-251A Introduction to Mammography, and RADT-251B Anatomy and Pathology of the Breast, and RADT-251C Positioning Techniques for Breast Imaging, and RADT-251D Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-252A Sterile Technique and Interventional Procedures 01 Semester Credits

Study of sterile technique, infection control, interventional procedures and OSHA regulations as applicable to the Breast Imaging Department.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A Introduction to Mammography, and RADT-251B Anatomy and Pathology of the Breast, and RADT-251C Positioning Techniques for Breast Imaging, and RADT-251D Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-252B Ultrasound Breast Imaging and Registry Review 01 Semester Credits

Ultrasound breast imaging, including anatomy on ultrasound images. Ultrasound physics and ultrasound imaged pathologies. Comprehensive Registry Review.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A Introduction to Mammography, and RADT-251B Anatomy and Pathology of the Breast, and RADT-251C Positioning Techniques for Breast Imaging, and RADT-251D Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-252C Legal Issues and MQSA Guidelines 01 Semester Credits

Standards of care, legal issues, and MQSA guidelines for the Breast Center will be addressed.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A Introduction to Mammography, and RADT-251B Anatomy and Pathology of the Breast, and RADT-251C Positioning Techniques for Breast Imaging, and RADT-251D Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-252D Accreditation Process for Mammography 01 Semester Credits

Accreditation process and preparation for FDA/MQSA/ACR inspection. Study required QC test frequencies and corrective action for ACR/MQSA and manufacturer specifications.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): RADT-2510 Fundamentals of Mammography, or RADT-251A Introduction to Mammography, and RADT-251B Anatomy and Pathology of the Breast, and RADT-251C Positioning Techniques for Breast Imaging, and RADT-251D Physics of Mammography; and concurrent enrollment in RADT-2930 Mammography Applications.

RADT-2911 Clinical Radiography II 07 Semester Credits

Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 576 hours. This includes 16 hours of embedded lecture, delivered at clinical site. Total hours required 576.

Prerequisite(s): RADT-1911 Clinical Radiography I, and departmental approval: admission to program.

RADT-291A Clinical Radiography II 06 Semester Credits

Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 496 hours. This includes 16 hours of embedded lecture, delivered at clinical site. Total hours required 496.

Prerequisite(s): RADT-191A Clinical Radiography I and RADT-191B Clinical Radiography I, departmental approval and admission to the program.

RADT-291B Clinical Radiography II

01 Semester Credits

Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 80 hours to be completed during the two week intersession.

Prerequisite(s): RADT-191A Clinical Radiography I and RADT-191B Clinical Radiography I, and RADT-291A Clinical Radiography II, departmental approval and admission to the program.

RADT-291S Clinical Radiography II

07 Semester Credits

Supervised sessions focusing on further development of medical imaging skills. Emphasis on cranium, vertebra, and articular system for patients including pediatric and geriatric populations. Experience gained through general diagnostic procedures, fluoroscopy, mobile radiography, emergency procedures, surgery, and digital imaging using a competency based system. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Clinical experience in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 576 hours. This includes 16 hours of embedded lecture, delivered at clinical site.

Total hours required 576.

Prerequisite(s): RADT-191S Clinical Radiography I, and departmental approval: admission to program.

RADT-2921 Clinical Radiography III

05 Semester Credits

Capstone course in Radiography. Supervised sessions provide further development and practical application of radiographic positioning during general radiographic procedures, fluoroscopy, mobile imaging and emergency procedures. Rotations include surgery, cardiovascular and interventional radiography, and digital imaging. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Includes use of

specialized equipment. Clinical experience in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 375 hours. This includes 15 hours of embedded lecture, delivered at clinical site. Total hours required 375.

Prerequisite(s): RADT-2911 Clinical Radiography II or RADT-291A Clinical Radiography II and RADT-291B Clinical Radiography II, departmental approval and admission to the program.

RADT-292S Clinical Radiography III

07 Semester Credits

Capstone course in Radiography. Supervised sessions provide further development and practical application of radiographic positioning during general radiographic procedures, fluoroscopy, mobile imaging and emergency procedures. Rotations include surgery, cardiovascular and interventional radiography, and digital imaging. Adjunct area rotations include computed tomography, magnetic resonance imaging, diagnostic medical sonography, radiation oncology, and nuclear medicine. Includes use of specialized equipment. Clinical experience in hospital environment.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 576 hours. This includes 16 hours of embedded lecture, delivered at clinical site. Total hours required 576.

Prerequisite(s): RADT-291S Clinical Radiography II, and departmental approval: admission to program.

RADT-2930 Mammography Applications

03 Semester Credits

Supervised sessions emphasizing practical application of mammography patient preparation and positioning for diagnostic and screening examinations using appropriate exposures, radiation protection and demonstrating professional/ethical skills. Performance, evaluation and recording of quality control tests, as required by the Mammography Quality Standards Act (MQSA) and the American College of Radiology (ACR), will be documented. Clinical experience in the mammography department of hospital environment for 16 weeks also includes interventional/special examinations.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 16 hours per week.

Prerequisite(s): RADT-2510 Fundamentals of Mammography; or RADT-251A Introduction to Mammography, and RADT-251B Anatomy and Pathology of the Breast, and RADT-251C Positioning Techniques for Breast Imaging, and RADT-251D Physics of Mammography; and concurrent enrollment in RADT-2520 Advanced Procedures in Mammography; or concurrent enrollment in RADT-252A Sterile Technique and Interventional Procedures, and RADT-252B Ultrasound Breast Imaging and Registry Review, and RADT-252C Legal Issues and MQSA Guidelines, and RADT-252D Accreditation Process for Mammography; or departmental approval.

RECORDING ARTS AND TECHNOLOGY - RAT

RAT-1010 Survey of the Recording Industry 03 Semester Credits

Introduction to the recording industry, intended for students who have a general interest in music, sound recordings and the entertainment industry. Topics include recording industry elements and practices; employment trends and outlook; copyrights, publishing and legal issues; impact of the personal computer and the Internet on the recording industry; how traditional and non-traditional record companies work; tools of the modern recording studio; the history of recorded sound; "critical listening" exercises identifying key elements of popular recorded music styles.

Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): None.

RAT-1100 Sound Recording and Design 03 Semester Credits

Introduction to theory of sound and recording process for media production. Course topics include principles of sound and hearing, audio terminology, recording equipment operation, storage mediums and recording techniques for location and studio applications. This is an introductory audio course for students interested in audio for video, television, film and digital media arts.

Lecture 01 hour. Laboratory 04 hours.
Prerequisite(s): Departmental approval.

RAT-1160 Making Independent Recordings 03 Semester Credits

Basic guide to making and selling independent recordings. Topics include operation of record companies, recording procedures, planning, budgets, copyrights, publishing, graphics and printing, manufacturing process, promotion and sales strategies, and setting up your own small business.

Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): None.

RAT-1300 Introduction to Recording 03 Semester Credits

Introduction to theory of sound and the recording process. Study of audio terminology, principles of sound and hearing, basic equipment, recorder operation, analog and digital signal storage methods.

Lecture 03 hours. Laboratory 00 hours.
Prerequisite(s): Departmental approval.

RAT-1310 Studio Operations 04 Semester Credits

Theory and practical applications of the recording studio. Topics include equipment setup and interface, small console signal flow and operating levels, patch bays,

studio documentation, basic voice and commercial recording, editing and mixing techniques.

Lecture 01 hour. Laboratory 06 hours.

Prerequisite(s): RAT-1300 Introduction to Recording or concurrent enrollment, or departmental approval.

RAT-1320 Audio Transducers 03 Semester Credits

Theory, characteristics and operation of various microphone types, loudspeakers, crossovers and speaker/room monitoring considerations.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-1300 Introduction to Recording or concurrent enrollment, and RAT-1310 Studio Operations or concurrent enrollment; or departmental approval.

RAT-1400 Concert Promotion 03 Semester Credits

Provides a basic guide to concert promotion. Topics include concert planning, organization, partnering, booking, sponsorships, contracts, unions, radio, press, television, street teams, flyers, budgets, graphics, printing, promotion and sales strategies, performance rights organizations, insurance, security, governmental regulations, and setting up your own small business. Work as a team to produce an actual concert or concert series.

Lecture 02 hours. Laboratory 02 hours.
Prerequisite(s): None.

RAT-1450 Concert Tour Management 03 Semester Credits

Comprehensive study of live concert tour and road management, and is intended for individuals interested in careers in live music production, recording artists, artist managers, booking agents and record company personnel. Topics include types of tours, budgets, accounting, logistics, tour coordination, interaction with other tour professionals, contracts and merchandising.

Lecture 01 hour. Laboratory 04 hours.
Prerequisite(s): None.

RAT-1500 Recording Theory I 03 Semester Credits

Introduction to practical techniques of multi-track recording. Session operating procedures, multiple microphone placement, track assignment, overdubbing, mixdown, and console and recorder operation included.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): RAT-1320 Audio Transducers, and concurrent enrollment in RAT-1511 Recording Lab I.

RAT-1511 Recording Lab I

02 Semester Credits

Practical applications of analog and digital theory and techniques covered in Recording Theory I. Student will record and mix multi-track music and audio for video projects in a professional studio environment.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): Concurrent enrollment in RAT-1500 Recording Theory I, or departmental approval.

RAT-1520 Audio Signal Processing

03 Semester Credits

Theory and operation of audio processing equipment. Introduction to entire range of studio effects devices including equalizers, variable gain amplifiers including compressors, limiters, gates and expanders, analog and digital delays and reverberation.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-1500 Recording Theory I or concurrent enrollment, and RAT-1511 Recording Lab I or concurrent enrollment; or departmental approval.

RAT-1530 Digital Audio Theory

03 Semester Credits

Theory, methods and practical applications of current digital recording systems. Topics include tape and disc-based recorders, operating system installation and maintenance, data storage methods, recording, editing and digital signal processing, and integration of digital recording equipment into modern studio environment. Student will demonstrate fundamental proficiencies in current digital recording methods and procedures.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-1300 Introduction to Recording, RAT-1310 Studio Operations, and MUS-1130 MIDI Technology I; or departmental approval.

RAT-1600 Concert Technical Production

03 Semester Credits

Concert Technical Production is a comprehensive applied study of all aspects of venue and show production. Topics include production, lighting, sound, staging, personnel, stage management, stagehand training, touring road crew protocol, venue load in/load out procedures and musical instrument technical support at live music events.

Students will apply above principles in weekly labs at live music concerts.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): None.

RAT-2300 Recording Theory II

03 Semester Credits

Continuation of practical techniques of recording. Topics include intermediate recording and mixing theory,

recording techniques, critical listening and intermediate ear training.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I, and concurrent enrollment in RAT-2311 Recording Lab II; or departmental approval.

RAT-2311 Recording Lab II

02 Semester Credits

Practical applications of theory and techniques covered in Recording Theory. Student will produce, record and mix various styles of musical and audio for video projects. Includes human relations and talent management.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): Concurrent enrollment in RAT-2300 Recording Theory II, or departmental approval.

RAT-2330 Digital Audio Mixing

03 Semester Credits

Advanced applications of digital audio recording, editing and mixing using current digital console and non-linear workstation environments. Topics include virtual console basics, digital signal processing, plug-ins, digital signal routing, digital automation basics, file interchange and basic project mastering techniques.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-1530 Digital Audio Theory, or departmental approval.

RAT-2341 Location Recording

02 Semester Credits

Techniques used in non-studio recording for news gathering, conference, public speaking, music and sound effects recording. Main emphasis will be hands-on, and students will record, edit and mix a variety of location projects.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): RAT-1320 Audio Transducers, or departmental approval.

RAT-2350 Audio Mastering

03 Semester Credits

Comprehensive applied study of the CD mastering process. Topics include theory and processes of preparing masters for various types of duplication and distribution, including CD, DVD and internet-distributed media formats. Students will perform CD pre-preparation using analog and disc-based editing tools, including current state of the art equalizers, compressors and limiters. The course will also cover current mastering trends, genre specific mastering considerations and archiving from analog and digital source material.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-1520 Audio Signal Processing, RAT-1530 Digital Audio Theory, RAT-2300 Recording Theory II, RAT-2311 Recording Lab II, or departmental approval.

RAT-2440 Sound for Theatre**03 Semester Credits**

Introduction to the essentials of theatrical sound. Topics covered include microphone use, microphone placement, amplifications, theatrical acoustics, Foley sound, recorded effects, and production methodology.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, and RAT-1300 Introduction to Recording, and RAT-1310 Studio Operations.

RAT-2520 Acoustics and Recording Studio Design**03 Semester Credits**

Principles of sound, room measurement techniques, and discussion of acoustical properties of room materials and their effect on room acoustics. Special emphasis on cost-effective studio design -- how to build a recording studio with limited budget.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

RAT-2540 Live Sound Reinforcement**03 Semester Credits**

Theory and operation of various live sound reinforcement systems. Includes acoustics, system setup, signal flow, mixing consoles, microphones, signal processing, amps, crossovers and speaker systems.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-1320 Audio Transducers, or departmental approval.

RAT-2550 Advanced Live Sound Reinforcement**03 Semester Credits**

Setup and operate sound systems at live music concerts under the direction of a faculty supervisor. Topics include sound system components, assembly, operation, location recording, technical maintenance and performance. Serve as crew for a minimum of twelve shows during the semester at local venues using small and medium size sound systems.

Lecture 00 hours. Laboratory 06 hours.

Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2540 Live Sound Reinforcement.

RAT-2940 Audio Recording Field Experience**01-02 Semester Credits**

Cooperative effort between the College and local and national audio-related businesses to provide students with work experience in industry setting. Student, instructor and internship supervisor will develop and implement an "Individual Field Experience Training Plan" which includes general responsibilities, and a training sequence designed to maximize hands-on industry training under actual working conditions.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 to 24 hours per week.

Prerequisite(s): RAT-2990 Recording Arts and Technology Capstone, or departmental approval.

RAT-2990 Recording Arts and Technology Capstone**03 Semester Credits**

Capstone course in Recording Arts and Technology. Student will design and implement a capstone recording project that applies the technical, oral, behavioral and written skills learned in previous RAT coursework, resulting in a cumulative evaluation of student recording skills based on established RAT standards. Includes discussion of emerging audio technologies and their impact on recording industry career opportunities.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II.

RELIGIOUS STUDIES - REL**REL-1010 Introduction to Religious Studies****03 Semester Credits**

Comprehensive introduction to concepts of religion, attributes of God, myth and symbol, faith and reason, rituals, and overview of major historical religions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

REL-179H Honors Contract in Religious Studies**01 Semester Credit**

Honors Contract complements and exceeds the requirements and objectives for an existing REL 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Religious Studies, whose instructor approves the Honors Contract.

REL-2010 Religious Traditions of Western Christianity**03 Semester Credits**

Comprehensive introduction to history, writings, teachings, and liturgical practices of Western Christianity. Includes historical Jesus, new testament church, patristic church, medieval church, Protestant Reformation, and Church today (including ecumenical concerns following the Second Vatican Council).

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

REL-2020 Religious Traditions of Judaism

03 Semester Credits

Comprehensive introduction to history, writings, teachings, and liturgical practices of Judaism. Includes historical background, Old Testament, special Jewish festivals, and Judaism's adaptation to modern society.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

REL-2030 Religious Traditions of Islam

03 Semester Credits

Comprehensive introduction to history, writings, teachings, and liturgical practices of Islam. Includes historical background, the Quran, special Islamic festivals, and Islam's adaptation to modern society.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

REL-2040 Religious Traditions of India

03 Semester Credits

Comprehensive introduction to history, writings, teachings, and liturgical practices of the religious traditions of India. Focus on Hinduism, Jainism and Sikhism.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

REL-2050 Religious Traditions of China and Japan

03 Semester Credits

Comprehensive introduction to history, writings, teachings, and liturgical practices of Buddhism, Confucianism, Taoism, and Shinto. Topics include lives and teachings of Buddha, Confucius, and Lao Tzu.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

REL-2060 African-American Religious Experience

03 Semester Credits

Comprehensive introduction to religious movements and institutions of African-Americans from the period of slavery to present. Includes historical background, Protestantism, Islam, civil rights movement and modern role of religion in African-American life.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

RESPIRATORY CARE - RESP

RESP-1300 Respiratory Care Equipment

04 Semester Credits

Overview of application of physical principles pertaining to physiologic function and diagnostic and therapeutic modalities employed in field of Respiratory Care.

Function and operation of respiratory care equipment: primary gas systems, gas regulating devices, oxygen controllers, humidifiers, nebulizers, oxygen administering

devices, oxygen analyzers, airways, manual resuscitators, monitoring and measuring equipment, and sterilization methods.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): Departmental approval.

RESP-1310 Cardiopulmonary Physiology

03 Semester Credits

Physiology of cardiovascular and pulmonary systems with emphasis on electrophysiology of the heart, electrocardiography interpretation, blood flow characteristics and hemodynamics. Pulmonary system emphasis on lung volumes, dynamics of ventilation, pulmonary function tests, diffusion, ventilation to perfusion characteristics, gas transport, oxygenation studies and control of ventilation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

RESP-1320 Acid-Base and Hemodynamics

02 Semester Credits

Overview of acid-base regulation, integrating the physiologic functions of the renal and respiratory systems. Emphasis is on body buffer systems, oxygen and carbon dioxide transport systems, basic chemistry, and circulating blood forces through the body. Patient analysis and principles of equipment used in the analysis of acid base, oxygenation status, cardiac output and cardiac blood pressures will be addressed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): RESP-1300 Respiratory Care Equipment, and RESP-1310 Cardiopulmonary Physiology.

RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases

05 Semester Credits

Theory and application of cardiopulmonary assessment, medical records, and charting. Includes physical assessment, assessment of lab values, radiologic evaluation, vital signs, EKG and pulmonary function testing and interpretation. Discussion of diseases including emphysema, chronic bronchitis, asthma, bronchiectasis, cystic fibrosis, pneumoconiosis, adult respiratory distress syndrome, pneumonia, pulmonary edema, cancer, acquired immune deficiency syndrome, tuberculosis, myasthenia gravis, Guillain-Barre and amyotrophic lateral sclerosis. Emphasis is on identifying signs and symptoms of pulmonary diseases and basic respiratory management of the patient.

Lecture 04 hours. Laboratory 03 hours.

Prerequisite(s): RESP-1300 Respiratory Care Equipment, and RESP-1310 Cardiopulmonary Physiology.

RESP-1340 Pharmacology for Respiratory Care
02 Semester Credits

General principles of pharmacology and calculations of drug dosages. Discussion of pharmacological principles and agents used in the treatment of cardiopulmonary disorders.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): RESP-1300 Respiratory Care Equipment, and RESP-1310 Cardiopulmonary Physiology.

RESP-1700 Asthma Management
01 Semester Credit

Introduction to asthma pathology and treatment. Emphasizes web-based education to asthma symptoms, risk factors, severity, pharmacologic treatment, and care plans. Cultural concepts of health and disease.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

RESP-2210 Introduction to Mechanical Ventilation
01 Semester Credit

Introduction to mechanical ventilation with special emphasis on ventilator terminology. Covers information necessary to understand basic functions of a life-support ventilator.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in RESP-2910 Respiratory Care Directed Practice I.

RESP-2300 Basic Therapeutic Procedures
03 Semester Credits

Theory, clinical application and analysis of basic respiratory care procedures. Emphasis on oxygen therapy, medical gas therapy, tracheal suctioning, humidity and aerosol therapy, chest physical therapy, incentive spirometry, intermittent positive pressure breathing, airway management, bronchoscopy, and thoracotomy tubes.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases.

RESP-2310 Mechanical Ventilation
04 Semester Credits

Theory and application of mechanical ventilation techniques with emphasis on mechanical ventilator characteristics, physiologic effects, patient set-up and evaluation, maintenance of oxygenation, weaning techniques, and nutritional concerns. Discussion on ventilator management and the use of high frequency ventilation. Discussion on the medicolegal issues involving life support systems.

Lecture 03 hours. Laboratory 03 hours.

Prerequisite(s): RESP-2210 Introduction to Mechanical Ventilation, and concurrent enrollment in RESP-2920 Respiratory Care Directed Practice II.

RESP-2320 Pediatric/Neonatal Respiratory Care
02 Semester Credits

Presentation of theory and its practical application to pediatric and neonatal respiratory disease states. Includes pathophysiology, etiology, patient assessment and treatment using equipment unique to this specialty area.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): RESP-2300 Basic Therapeutic Procedures and concurrent enrollment in RESP-2310 Mechanical Ventilation.

RESP-2330 Respiratory Home Care/Rehabilitation
01 Semester Credit

Identification of the therapist's role in home care and pulmonary rehabilitation. Presentation of oxygen therapy and delivery systems in the private home. Procedure for institution and maintenance of home mechanical ventilation. Outline of new trends in home care and pulmonary rehabilitation. Guidelines on setting up hospital-based pulmonary rehabilitation programs along with patient management and follow-up strategies.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): RESP-2920 Respiratory Care Directed Practice II.

RESP-2341 Patient Management Problems
01 Semester Credit

Reinforces the clinical education components of information gathering and decision-making specific to assessment and treatment of cardiopulmonary impairment. Specific emphasis placed on the methodologies involved in obtaining and prioritizing diagnostic information. Comprehensive self-assessment at advanced practitioner level of respiratory care steps involved in the research process.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): RESP-2920 Respiratory Care Directed Practice II.

RESP-2910 Respiratory Care Directed Practice I
03 Semester Credits

Directed practice in the clinical setting on respiratory care equipment, policies, and procedures. Emphasis on patient assessment, bedside pulmonary function testing, aerosol therapy, incentive spirometry and oxygen therapy.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 192 hours. (24 hours per week for 8 weeks.)

Prerequisite(s): RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases, and RESP-1340 Pharmacology for Respiratory Care.

**RESP-2920 Respiratory Care Directed Practice II
05 Semester Credits**

Directed practice in the clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on intubation, arterial blood gas punctures and analysis, bronchopulmonary hygiene, intermittent positive pressure breathing, manual ventilation and suctioning, and mechanical ventilation. Clinical activities also include proficiencies completed in patient assessment, aerosol therapy, incentive spirometry, bedside pulmonary function testing, and oxygen therapy.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 360 hours. (24 hours per week for 15 weeks.)

Prerequisite(s): RESP-2310 Mechanical Ventilation or concurrent enrollment, and RESP-2910 Respiratory Care Directed Practice I.

**RESP-2930 Respiratory Care Directed Practice III
05 Semester Credits**

Capstone course in Respiratory Care. Directed practice in clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on adult volume/pressure ventilation and continuous positive airway pressure, pulmonary function testing in the laboratory, pediatric patient care, home care, rehabilitation, weaning from mechanical ventilation, respiratory care in the extended care facility environment, and patient transport.

Lecture 01 hour. Laboratory 00 hours.

Other Required Hours: Directed practice: 360 hours. (24 hours per week.)

Prerequisite(s): RESP-2920 Respiratory Care Directed Practice II.

RUSSIAN - RUSS**RUSS-1010 Beginning Russian I
04 Semester Credits**

Introduction to modern Russian language. Emphasis on speaking, understanding spoken Russian, reading and writing through multiple approaches including audio, video and computer components. Supporting study of basic principles of grammar.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

**RUSS-1020 Beginning Russian II
04 Semester Credits**

Continued study of grammar and vocabulary. Oral and written exercises. Reading of texts of medium difficulty. Developing aural comprehension skills and ability for oral expression through patterns learned from audio-visual materials used in classroom.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): RUSS-1010 Beginning Russian I, or departmental approval.

**RUSS-2010 Intermediate Russian I
03 Semester Credits**

Introduction to more advanced vocabulary and speech patterns and continuation of in-depth study of grammar. Practical application of skills of understanding, speaking, reading and writing Russian. Cultural exposure through reading texts and using multi-media approaches.

Attendance at various cultural events may be required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): RUSS-1020 Beginning Russian II, or departmental approval.

**RUSS-2020 Intermediate Russian II
03 Semester Credits**

In-depth study of advanced vocabulary and speech patterns, complex sentence structures and grammar. Advanced skills in understanding, speaking, reading and writing. Continued cultural exposure through text reading, film viewing, audio, video and computer materials and discussions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): RUSS-2010 Intermediate Russian I, or departmental approval.

**RUSS-2410 Russian Conversation and Composition
03 Semester Credits**

Conversation and composition revolve around topics of general interest taken from everyday life. In conversing, students develop pronunciation, intonation, fluency and comprehension skills. Writing fosters practice of familiar terminology mixed with new vocabulary and idioms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): RUSS-2020 Intermediate Russian II, or departmental approval.

**RUSS-2420 Russian Literature and Culture
03 Semester Credits**

Survey of Russian literature, emphasizing 19th and 20th centuries, highlighting prose and verse of representative writers and their works in perspective of traditional and contemporary Russian culture.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): RUSS-2020 Intermediate Russian II, or departmental approval.

SOCIOLOGY - SOC**SOC-1010 Introductory Sociology****03 Semester Credits**

An overview of the principles, sociological perspectives, theories, concepts, and research methods used in the field with more intensive study in the following areas: culture, socialization, formal organizations, social structure, and social stratification. Additional emphasis is placed on the application of sociology to current events.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

UAN Approved: OSS021

SOC-101H Honors Introductory Sociology**03 Semester Credits**

In-depth analysis of sociological perspectives, theories, concepts, and research methods. Emphasizes thorough comprehension of concepts such as culture, socialization, and social stratification through application of concepts to real-world situations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG 101H Honors College Composition I.

SOC-1020 Social Institutions**03 Semester Credits**

Examination of major social institutions; the family, religion, education, polity, economy, and mass communications; employing principles, concepts, theories and research methods.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or SSCI-1030 Introduction to Social Science I, or ANTH-1010 Cultural Anthropology.

SOC-179H Honors Contract in Sociology**01 Semester Credit**

Honors Contract complements and exceeds the requirements and objectives for an existing SOC 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Sociology, whose instructor approves the Honors Contract.

SOC-2010 Social Problems**03 Semester Credits**

Analysis of contemporary American social problems such as race, poverty, drugs, sex, violence, crime and delinquency. Sociological approach used to understand

underlying factors and history of problems and to evaluate individual and societal solutions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

UAN Approved: OSS025

SOC-201H Honors Social Problems**03 Semester Credits**

In-depth sociological analysis of contemporary social problems in the United States, cross-cultural solutions and their implications for individuals, social institutions and society. Emphasis on application of sociological imagination, sociological theories and multiple research methods to understand social forces that promote social inequalities and their consequences, based on race/ethnicity, gender, social class and other factors. Course culminates in student's clarification and appraisal of personal values, and formulation of personal strategy to influence social policy and affect change regarding a specific social problem examined in the course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, and eligibility for ENG-101H Honors College Composition I.

SOC-2020 Sociology of the Family**03 Semester Credits**

Historical, comparative, and contemporary analysis of marriages and families and their relationship to other social institutions. Sociological perspectives used to understand social, psychological and economic aspects of intimate interpersonal relations across the lifecourse and among a variety of lifestyles and cultures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

SOC-2051 Introduction to Social Welfare**03 Semester Credits**

Surveys history, functioning, and social issues of social welfare system relating them to broader American socio-economic and political systems. Special focus on problems of economically and socially disadvantaged groups.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

SOC-2060 Human Behavior and the Social Environment**03 Semester Credits**

Social work perspective on human development across the life cycle. Human diversity approach consistent with the needs of social work students preparing for practice.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, and PSY-1010 General Psychology or PSY-101H Honors General Psychology.

SOC-2070 Poverty in the United States**03 Semester Credits**

Survey of social and personal dimensions of life in the inner city and other areas of poverty in United States. For person wishing to develop an in-depth understanding and/or intending to work in such areas.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-2050 Introduction to Social Welfare.

SOC-2100 Aging and Society**03 Semester Credits**

Cross-cultural examination of social, biological and psychological process of aging. Societies studied with regards to social characteristics of older citizens, their social roles and relations with various social institutions, friends and voluntary associations. Impact of social class, race, ethnicity, and religion on aging and ageism considered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

SOC-2110 Death and Dying**03 Semester Credits**

Examination of death and dying through a multi-disciplinary approach to understand the connection of death and dying in various contexts: sociological, ethical, medical, legal, psychological, and religious.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

SOC-2150 Deviance**03 Semester Credits**

Sociological examination deviant attitudes, behaviors, and conditions. Exploration of how actions come to be defined as deviant, theories of deviance, and methods of social control and social reaction. Different types of deviant behavior examined, including sexual deviance, crime, drugs, medical deviance, and other forms of deviant behavior.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I; and SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or ANTH-1010 Cultural Anthropology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

SOC-2160 Introduction to Criminology**03 Semester Credits**

To develop a sociological framework for examining crime. Review and apply major theories of criminal behavior. Critically examine how specific behaviors and social conditions become defined as crime. Use of sociological principles to assess the criminal justice system's ability to deter, punish, and rehabilitate offenders.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ANTH-1010 Cultural Anthropology, or PSY-1010 General Psychology, or SOC-1010 Introductory Sociology, or LAWE-1000 Introduction to Criminal Justice.

SOC-2210 Dating and Intimate Relationships**03 Semester Credits**

Intimate relationships studied on life course continuum from pre-teen to late adulthood, taking into consideration the profound effects exerted by ethnicity, race, gender, human sexuality, socioeconomic status, age, and place of residency. Analysis of the state, quality and issues related to various types of intimate relationships over time with emphasis on friendship, dating, cohabitation, marriage, dissolution and resolution. Students use C. Wright Mill's concepts of the sociological imagination, public issues and personal troubles to link events in society to the state of intimate relationships in America today.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or ANTH-1010 Cultural Anthropology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology.

SOC-2310 Contemporary American Black-White Relations**03 Semester Credits**

Sociological and psychological analysis of contemporary American black-white relations. Study of minority-majority behavior patterns as related to social-historical structure, stratification, and power. Consideration of programs, movements and alternative solutions to present conditions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

SOC-2410 Sociology of Gender**03 Semester Credits**

Analysis of the social construction of gender, gender roles, and gender stratification in American society. Compare gender assumptions within social and cross-cultural contexts. Examine socialization and social psychological influences on gender identity, the impact of gender in relationships, the importance of sex and gender in institutions and organizations, and the impact of recent social movements and social policies.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ANTH-1010 Cultural Anthropology, or SOC-1010 Introductory Sociology, or SOC-101H Honors Introductory Sociology, or any 2000 level course in Sociology.

SOC-2510 Urban Sociology**03 Semester Credits**

Analysis of historical development of contemporary metropolis with its challenges to diversity, equality, inclusion, and change. Sociological concepts, theories and research methods used to characterize urban life and examine interrelatedness of social institutions typical of postmodern society. Cross-national comparisons drawn. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

SOC-2550 Race and Ethnic Relations**03 Semester Credits**

Analysis of sources, processes, and consequences of current intergroup relations in the United States; identification of various segments of population, their history and patterns of adaptation to prejudice and discrimination; and exploration of attempts to equalize power differences and structured social inequality. Includes cross-cultural comparisons. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): SOC-1010 Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or HIST-2160 African American History 1877-present, or ANTH-1010 Cultural Anthropology.

OAN Approved: OSS024

SOC-2830 Cooperative Field Experience**01-03 Semester Credits**

Limited to students in Cooperative Education program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits. *Lecture 00 hours. Laboratory 00 hours.*

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education program.

SPANISH - SPAN**SPAN-1011 Beginning Spanish Language and Cultures I****04 Semester Credits**

Introduction to Spanish language and cultures through multiple approaches with emphasis on spoken and written communication, listening and reading comprehension, and cultural awareness. Practice of basic functional Spanish in basic oral (listening-speaking) and written (reading-writing) communication situations and cultural contexts. *Lecture 03 hours. Laboratory 02 hours.*

Prerequisite(s): None.

SPAN-1021 Beginning Spanish Language and Cultures II**04 Semester Credits**

Second beginning course continues introducing Spanish language and cultures through multiple approaches with emphasis on development of spoken and written communication, listening and reading comprehension, and cultural awareness. Practice of functional Spanish in oral (listening-speaking) and written (reading-writing) communication situations and cultural contexts. *Lecture 03 hours. Laboratory 02 hours.*

Prerequisite(s): SPAN-1011 Beginning Spanish I, or one year of high school Spanish, or departmental approval.

SPAN-2010 Intermediate Spanish I**03 Semester Credits**

Intensive exercises in written and oral expression. Grammar review and vocabulary building. Study of Spanish and Mexican civilizations. Introduction to literature. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): SPAN-1021 Beginning Spanish II, or two years of high school Spanish, or departmental approval.

SPAN-2020 Intermediate Spanish II**03 Semester Credits**

Intensive exercises in written and oral expression. Additional grammar review and vocabulary building. Further exploration of Spanish. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): SPAN-2010 Intermediate Spanish I, or three years of high school Spanish, or departmental approval.

SPAN-2411 Spanish Conversation and Composition**03 Semester Credits**

Discussion on topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Practice in writing compositions. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): SPAN-2020 Intermediate Spanish II, or concurrent enrollment with departmental approval: three years of high school Spanish.

SPAN-2420 Introduction to Spanish Culture, Civilization, and Literature**03 Semester Credits**

Introduction to Spanish civilization and literature from early beginning to present day. Special emphasis on interrelationship between history and geography, and literature of Spain and its culture. *Lecture 03 hours. Laboratory 00 hours.*

Prerequisite(s): SPAN-2020 Intermediate Spanish II, or concurrent enrollment with departmental approval: three years of high school Spanish.

SPAN-2430 Civilization, Culture, and Literature of Latin America

03 Semester Credits

Instruction in Spanish. Civilization and literature of Latin America from pre-Columbian period to present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPAN-2020 Intermediate Spanish II, or concurrent enrollment with departmental approval: three years of high school Spanish.

SPEECH COMMUNICATION - SPCH

SPCH-0910 Basic Communication Skills

03 Semester Credits

Demonstrate ways communication can be processed, distorted, or shared. Special emphasis on personal communication growth, processing information, message analysis and verbal expression as basic communication skills necessary for college achievement.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

SPCH-1000 Fundamentals of Interpersonal Communication

03 Semester Credits

Purpose and process of verbal and non-verbal communication to strengthen daily communication skills. Special emphasis given to perception, self concept, expressing feelings, empathy and listening as learned interpersonal skills. Combines theoretical concepts with experiential learning through lecture, discussion, and simulations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OCM002

SPCH-1010 Fundamentals of Speech Communication

03 Semester Credits

Effective speech communication. Application of principles of speech content and delivery to a variety of practical speaking and listening situations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

OAN Approved: OCM004

SPCH-101H Honors Fundamentals of Speech Communication

03 Semester Credits

In-depth study and application of effective speech communication. Includes principles of speech content and delivery in a variety of speaking and listening situations. Research in the origins and history of speech including classic Greek, Roman, and contemporary models. Emphasis on speaking and speech evaluation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

OAN Approved: OCM004

SPCH-1050 Voice and Articulation

03 Semester Credits

Practical course in application of both theory and technique to conscious vocal control and development of articulation and pronunciation standards. Individual and group practice. Performance through exercises and readings.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

SPCH-1210 Group Discussion

03 Semester Credits

Basic elements of communications and small group theory as employed in typical small group situation. Emphasis placed on individual's responsibility in discussion setting, focusing on development of leadership abilities within each group. Analysis of group interaction in problem-solving process for task-oriented groups.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OCM003

SPCH-2000 Introduction to Communication Theory

03 Semester Credits

Introduction to theories of human communication. Analyzing the communication process by examining the process of building communication theory, as well as addressing theories in a variety of communication contexts such as interpersonal, group, public, organizational, influence, mass media, and cultural. Attention to the application of communication theory in achieving a better understanding the process of human communication.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1000 Fundamentals of Interpersonal Communication or SPCH-1010 Fundamentals of Speech Communication or SPCH-101H Honors Fundamentals of Speech Communication; and eligibility for ENG-1010 College Composition I.

SPCH-2010 Advanced Public Speaking

03 Semester Credits

Organizing and presenting informative speeches, persuasive speeches and speeches for special occasions. Emphasis on using evidence and reasoning to support ideas, adapting to the audience, developing effective oral style, and improving physical and vocal attributes of delivery.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1010 Fundamentals of Speech Communication, or departmental approval: comparable knowledge or skills.

SPCH-2020 Interviewing**03 Semester Credits**

Theory and practice of interviewing, including interview structures, questioning techniques and formats, and a range of interview types. Specific practice in selection and workplace interviewing. Modular courses SPCH-202A, SPCH-202B, and SPCH-202C together will also meet requirements for this course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

SPCH-202A Interviewing Overview**01 Semester Credit**

Theory and practice of interviewing, including interview structures, questioning techniques and formats, interviewing etiquette, listening skills, and nonverbal communication issues in interviewing. This course required before taking other interviewing modules on specific interview types. Verify transferability of this modular course with your receiving institution.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

SPCH-202B Selection Interviewing**01 Semester Credit**

Theory and practice of selection interviewing, from the point of view of both the applicant and the employer. Verify transferability of this modular course with your receiving institution.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): SPCH-202A Interviewing Overview.

SPCH-202C Workplace Interviewing**01 Semester Credit**

Theory and practice of interviewing in the workplace, specifically including performance appraisal, exit, and disciplinary interviews, as well as workplace coaching. Verify transferability of this modular course with your receiving institution.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): SPCH-202A Interviewing Overview.

SPCH-2050 Oral Interpretation**03 Semester Credits**

Development of student's oral ability to communicate various types of written material with understanding and appreciation.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1010 Fundamentals of Speech Communication.

SPCH-2060 Interviewing for Information**01 Semester Credit**

Theory and practice of interviewing for information, specifically journalistic and information gathering interviewing, health related interviewing, and survey interviewing. Verify transferability of this course with your receiving institution.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): SPCH-2020 Interviewing, or SPCH-202A Interviewing Overview.

SPCH-2070 Relational Interviewing**01 Semester Credit**

Theory and practice of interviewing conducted to affect relationships, specifically problem-solving interviews, persuasive interviews, and counseling interviews. Verify transferability of this course with your receiving institution.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): SPCH-2020 Interviewing or SPCH-202A Interviewing Overview.

SPCH-2110 Argumentation and Debate**03 Semester Credits**

Discovering, selecting and evaluating evidence and arrangement into orderly persuasive oral and written argument. Special emphasis on causes and effects of prejudice, remedies and influence of language on human behavior.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1010 Fundamentals of Speech Communication, or departmental approval: comparable knowledge or skills.

SPCH-2120 Forensics Activity**01 Semester Credit**

Participation in variety of forensic activities by assignment including intercollegiate debate, choral reading, reader's theatre, and individual events. (May be repeated for a maximum of three credit hours.)

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): SPCH-2110 Argumentation and Debate, or SPCH-2050 Oral Interpretation, or departmental approval: comparable knowledge or skills.

SPCH-2130 Business and Professional Communication**03 Semester Credits**

Familiarizes students with theories and practices of oral communication which occur in organizational/business environment in individual or group situations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1000 Fundamentals of Interpersonal Communication, or SPCH-1010 Fundamentals of Speech Communication, or SPCH-1210 Group Discussion, or departmental approval: comparable knowledge or skills.

SPCH-2150 Introduction to Speech Pathology
03 Semester Credits

Survey of profession of speech pathology and introduction to various organic and functional speech disorders including deviant articulation, delayed speech development, and stuttering. Techniques for diagnosis and treatment explored.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1050 Voice and Articulation, and departmental approval: sophomore standing or consent of instructor.

SPCH-2160 Intercultural Communication
03 Semester Credits

Theory and application of communication concepts operating between people of different cultures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

SPCH-2180 Principles of Phonetics
03 Semester Credits

Study of the theory, principles and practices that are employed to describe the sounds of spoken English. Introduction to the International Phonetic Alphabet (IPA) and its application in transcribing the sounds of normal, deviant and accented speech. Course content is relevant to the disciplines of speech and hearing science, education, linguistics and theatre.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPCH-1050 Voice and Articulation, or departmental approval.

SPORT AND EXERCISE STUDIES - SES

SES-1001 Introduction to Sport and Exercise Studies
02 Semester Credits

An overview of the field of exercise science and the Sport and Exercise Studies program at Cuyahoga Community College. Objectives include describing various aspects of careers, identifying professional resources and organizations, and determining opportunities for advanced study in sport and exercise studies. Requires observation and assignments outside of the classroom.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): None.

SES-1040 Teaching Exercise Training Techniques
03 Semester Credits

Instruction on how to teach basic principles, concepts, and techniques of exercise. Students will learn to instruct cardiovascular, resistance, functional and flexibility exercises and activities. Includes proper instructional exercise techniques, guidelines, safety, injury prevention, and basic exercise programming. Students will assist in teaching exercise techniques to PE and/or recreation classes. Outside class assignments may be required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

SES-1100 Fundamentals of Fitness and Sport Management
03 Semester Credits

An in-depth look at fitness and sport management in the health/recreation/fitness club industry. Topics include management, budget, finances, membership, sales, marketing, risk management, liability and operation of a health/recreation/fitness club business.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

SES-1201 Fitness and Wellness Coaching
03 Semester Credits

Concepts of fitness and wellness coaching including health behavior change theories, client assessment, goal setting, evaluation processes, coaching dialogue, and coaching ethics. Students will learn how to develop a coaching approach. Coaching sessions required in class and/or out of class.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

SES-2000 Essentials of Sports Injury Care
03 Semester Credits

Designed to provide entry level knowledge in the field of sport and fitness related injuries. This course includes basic anatomy of common injuries, evaluation techniques, preventive measures to reduce the incidences of injuries and knowledge of basic treatment procedures. Legal and ethical issues will also be discussed.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): HLTH-1310 Cardiopulmonary Resuscitation or EMT-1310 Cardiopulmonary Resuscitation or concurrent enrollment HLTH-1230 Standard First Aid and Personal Safety, or concurrent enrollment or departmental approval.

SES-2010 Exercise and Movement Anatomy
03 Semester Credits

Designed for movement and fitness professionals. This course will examine the anatomical structures, joint actions, and the neuromyofascial and musculoskeletal system of human movement related to exercise, sport, recreation and dance.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None: BIO-1050 Human Biology and BIO-105L Human Biology Laboratory or departmental approval

SES-2100 Sport and Exercise Physiology
03 Semester Credits

Designed to increase student's knowledge and understanding about human physiology and the adaptations that occur during exercise. Topics include energy metabolism, cardiovascular, respiratory, endocrine, neuromuscular, nutrition, environmental factors, and applied exercise physiology. The laboratory is designed to complement the lecture area.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2130 Kinesiology: Fundamentals of Human Movement
03 Semester Credits

Analysis of functional human movement based on the anatomical, neuro-myofascial, biomechanical and Anatomy Trains principles. Emphasis is given to the application of these principles to the understanding of movement in exercise, recreation, sport and dance.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): BIO-2331 Anatomy and Physiology I or SES-2010 Exercise and Movement Anatomy; or departmental approval.

SES-2210 Exercise Testing, Measurement, and Evaluation
03 Semester Credits

Study of the techniques for conducting health screenings and fitness assessments and interpreting the results. Assessments include risk stratification, cardiorespiratory fitness, muscular strength and endurance, range of motion, posture, balance, movement patterns and body composition. Emphasis on safety guidelines and precautions. Measurement and evaluation concepts will be introduced.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2220 Exercise Prescription and Program Design
03 Semester Credits

Design, implement and evaluate appropriate exercise prescriptions and programs for a variety of healthy and "at risk" populations. Behavior change, motivational concepts, and other specific programming issues will also be addressed.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-2210 Exercise Testing, Measurement, and Evaluation, or departmental approval

SES-2300 Personal Training Certification Preparation
03 Semester Credits

Preparation for nationally accredited personal training certification. Covers exercise physiology, anatomy, kinesiology, biomechanics, exercise techniques, exercise testing, exercise prescription and program design, behavior modification, injury prevention, first aid, legal issues, business issues, and professional ethics.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2310 Advanced Training Concepts and Techniques
03 Semester Credits

Provides students with an opportunity to develop an in-depth understanding of the advanced principles and concepts of functional, resistance, sports performance, cardiorespiratory and flexibility exercises and training/conditioning programs. Students will learn safe and proper instructional techniques and teaching methodologies using a variety of equipment. Outside class assignments may be required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-1040 Teaching Exercise Training Techniques or departmental approval.

SES-2320 Group Fitness Instructor
03 Semester Credits

Preparation for career as Group Fitness/ Exercise Instructor. Focus is on developing instructional techniques such as cueing, choreography, and how to safely modify classes to meet the needs of both healthy individuals and special populations for all formats of group exercise classes.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2330 Motor Learning and Development
03 Semester Credits

Provide students with an understanding of the changes that occur in motor learning and development over the entire lifespan. Participants will have opportunities to observe and analyze fundamental motor patterns as they are performed in various settings.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval

SES-2340 Analysis of Motor Skills
03 Semester Credits

Introduction to the fundamentals of biomechanics related to human movement and the science of motor skill diagnosis.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval

SES-2350 Exercise For Special Populations
03 Semester Credits

An overview of procedures, concepts, and modifications related to fitness testing and exercise programming for various life stages and chronic diseases. Benefits of exercise and public health implications for each condition will be addressed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2400 Sports Coaching: Principles and Concepts
03 Semester Credits

Theories and principles for coaching sports and sport skills. Emphasis on the development of a coaching philosophy, coaching ethics and the impact of contemporary trends and issues on coaching, and skills common to all coaching activities.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SES-2310 Advanced Training Concepts and Techniques or departmental approval.

SES-2840 Practicum: Sport and Exercise Studies
02 Semester Credits

Capstone Course: Apply practical skills by working in the field of health, wellness, and fitness through practicum experience on-campus or off site experiences. Health, wellness and fitness assessment, program design, program evaluation, and daily operation of a fitness facility.

Includes topics relevant to case studies, exercise programming, legal and safety concerns, continuing education and certification opportunities, job search, and resume building. Completion and submission of resume and Professional Program Portfolio.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Practicum: Eight hours a week for fifteen weeks; Seminar 1 hour a week.

Prerequisite(s): SES-2130 Kinesiology: Fundamentals of Human Movement, or concurrent enrollment ;and SES-2220 Exercise Prescription and Program Design, or concurrent enrollment or departmental approval.

SURGICAL TECHNOLOGY - SURT

SURT-1000 Survey of Surgical Technology
01 Semester Credits

Designed to familiarize students seeking a career in health-care within the profession of surgical technology.

Course provides an overview of history, professional organization, philosophy and practice of surgical technology. Discussion of roles and responsibilities of operating room personnel will also be provided as well as study of asepsis, instrumentation, positioning and draping.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): MA-1020 Medical Terminology I, and departmental approval.

SURT-1300 Introduction to Surgery
05 Semester Credits

Presentation and discussion of development of modern day surgery, organization of operating room department, roles of operating room personnel, health care reform practices, and care of surgical patient. Infection control applicable to operative setting discussed including sterilization of surgical supplies, sterile techniques, and application of sterile techniques in operating room. Discussion of special items used in operating room, general and regional anesthesia, wound healing, sutures, and staplers. Legal and ethical aspects of operating room practice introduced.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in SURT-130L Surgery Lab and departmental approval: Admission to program.

SURT-130L Surgery Lab**02 Semester Credits**

Practice of assistant circulating skills and scrub skills of surgical technologist. Patient transportation and transfer skills, operation of the surgical bed, patient positioning, operation of the electrosurgical unit and suction system, sterile techniques utilized when opening and dispensing sterile supplies, hair removal, skin preparation, urinary catheterization, surgical scrub, gowning and gloving. Employability and problem solving skills introduced.

Lecture 00 hour. Laboratory 06 hours.

Prerequisite(s): Concurrent enrollment in SURT-1300

Introduction to Surgery and departmental approval: Admission to program.

SURT-1330 General Surgery**05 Semester Credits**

Includes steps of an operative procedure, features of general surgery, hemostasis, operative drains, surgical specimens, layers of abdominal wall, abdominal incisions and laparotomy. Discussion on operative procedures may include hernia procedures of the abdominal region, liver and biliary procedures, pancreas and spleen procedures, gastric and related esophageal procedures, lower gastrointestinal procedures, breast surgery, gynecological and obstetrical procedures, and plastics/reconstructive surgery.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab and concurrent enrollment in SURT-1911 Clinical Experience I.

SURT-1700 Sterile Processing Tech I**04 Semester Credits**

Presentation and discussion of development and history of a modern Sterile Processing Department. Roles and responsibilities of Sterile Processing Technicians. Review of the anatomy and physiology of the human body in relation to processing of medical devices and patient care equipment. Discussion of basic microbiology and identification of common microbes and diseases found in today's health care environment. Presentation and discussion of infection control techniques in relation to disease transmission. Demonstration of appropriate decontamination techniques and protocol of medical devices and patient care equipment to eliminate the occurrence of a health care acquired infection. Discussion of federal and private organizations affecting daily functions of field of study. Legal and ethical aspects of Sterile Processing practice introduced.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment, and MA-1020 Medical Terminology I, or concurrent enrollment, and MATH-0950 Beginning Algebra I, and concurrent enrollment in SURT-1720 Introduction to Hospital Administration, and departmental approval: admission to Sterile Processing Distribution program.

SURT-1710 Sterile Processing Tech II**04 Semester Credits**

Presentation and discussion of techniques and protocol of processing patient care equipment. Review and demonstration of the various packaging methods currently in use in today's health care environment for sterile processing of critical medical devices. Discussion and identification of surgical instruments including techniques for recognizing damage and/or poor working condition to allow technicians to remove for preventive maintenance. Discussion and identification of the various methods of sterilization currently used in health care. Demonstration of appropriate monitoring techniques to achieve required degree of sterile assurance level. Identification of sterile storage procedures and concepts. Review and demonstration of appropriate distribution methods and effect each has on the cost of med/surgical supplies.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): SURT-1700 Sterile Processing Tech I, and SURT-1720 Introduction to Hospital Administration, and concurrent enrollment in SURT-1861, or departmental approval.

SURT-1720 Introduction to Hospital Administration**01 Semester Credit**

Presentation and discussion of history, development and current trends in the daily operations of modern hospitals. Hospital governance, administration and management. Review of functions of clinical patient care areas of inpatient care, outpatient care, surgery, emergency services, ancillary diagnostic and rehabilitation services. Review of patient, facility and administrative support services. Discussion of critical interrelated functions of all departments of hospital to insure quality patient care is delivered. Introduction to hospital budgeting, marketing, financing, billing, quality improvement and accreditation. Presentation of case studies to emphasize actual ethical concerns that may be experienced in performance of duties.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in SURT-1700 Sterile Processing Tech I, and admission to the Sterile Processing and Distribution program.

SURT-1861 Clinical Experience: Sterile Processing 02 Semester Credits

Supervised clinical experience in central service/materials management department of health care facility covering principles and practices of cleaning, decontamination, and sterilization of medical instruments and apparatus.

Fundamentals of wrapping, sterile set-ups, safety rules and regulations, inventory control, recordkeeping and quality assurance.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 240 hours per semester.

Prerequisite(s): SURT-1700 Sterile Processing Tech I, and concurrent enrollment in SURT-1710 Sterile Processing Tech II.

SURT-1911 Clinical Experience I 03 Semester Credits

Beginning level scrubbing and instrumentation skills while caring for a surgical patient in operating room at assigned affiliated hospital or surgery center. Skills performed correlate with skills learned in surgery lab. Includes scrubbing, gowning and gloving, back table and mayo set-ups, surgical draping, instrumentation skills, basic procedural knowledge and employability skills. Students perform primarily in the second scrub role, gradually increasing to the first scrub role.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Practicum: 16 hours per week in hospital setting.

Seminar: 1 hour per week.

Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab and concurrent enrollment in SURT-1330 General Surgery.

SURT-1921 Clinical Experience II 02 Semester Credits

Practical application of previously learned surgical skills at assigned affiliated hospital. Students perform in both first and second scrub roles during operative procedures, increasing in proficiency. Weekly CST Exam review and post-clinical experience discussion.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Practicum: 16 hours per week in hospital setting for 8-weeks.

Seminar: 1 hour per week for 8-weeks.

Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab and SURT-1330 General Surgery and SURT-1911 Clinical Experience I.

SURT-2300 Surgical Specialties 05 Semester Credits

Presentation and discussion of surgical specialty procedures; includes ophthalmic, otorhinolaryngology, oral/maxillofacial, genitourinary, orthopedic, cardio/thoracic, peripheral vascular, neurosurgery, transplant, and trauma surgical procedures.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab and SURT-1330 General Surgery and SURT-1911 Clinical Experience I and SURT-1921 Clinical Experience II and concurrent enrollment in SURT-2851 Clinical Experience III.

SURT-2851 Clinical Experience III 03 Semester Credits

Practical application of previously learned surgical skills at assigned affiliated hospital. Basic competency of scrub skills relating to general, gynecological and specialty surgical procedures. Students perform primarily in the first scrub role during operative procedures, increasing in proficiency. Weekly CST Exam review and post-clinical experience discussion.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Practicum: 16 hours per week in hospital setting.

Seminar: 1 hour per week.

Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab and SURT-1330 General Surgery and SURT-1911 Clinical Experience I and SURT-1921 Clinical Experience II and concurrent enrollment in SURT-2300 Surgical Specialties.

SURT-2862 Clinical Experience IV 04 Semester Credits

Capstone course in Surgical Technology, with a focus on specialty surgical procedures. Practical application of previously learned surgical skills at assigned affiliated hospital. Students perform primarily in the first scrub role. Weekly CST Exam review and post-clinical experience discussion. All students must register and sit for the Certified Surgical Technology (CST) Examination at the end of the course. Each student is responsible to pay all costs associated with the examination.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Practicum: 24 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): SURT-1300 Introduction to Surgery and SURT-130L Surgery Lab and SURT-1330 General Surgery and SURT-1911 Clinical Experience I and SURT-1921 Clinical Experience II and SURT-2300 Surgical Specialties and SURT-2851 Clinical Experience III.

THEATRE ARTS - THEA

THEA-1010 Theatre Appreciation 03 Semester Credits

Examination of theatre as art form. Study of how playwrights, directors, actors, scenic designers, costumers, make-up artists, and technicians approach their crafts. Students not required to perform.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0980 Language Fundamentals I or eligibility for ENG-0990 Language Fundamentals II.

THEA-1100 Survey and Appreciation of American Musical Theatre 03 Semester Credits

Survey and appreciation of dramatic, musical and staging development of American musical theatre from 18th century through 20th century, including mega-musicals of the 1990's.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

THEA-1300 Fundamentals of Theatrical Makeup 03 Semester Credits

Practical application of theory and techniques of makeup for performers.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

THEA-1320 Introduction to Stage Costumes 03 Semester Credits

An introduction to the theories, principles and basic skills of costume design. Includes design process, fabrication, construction techniques and methodology.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

THEA-1400 Stage Design I - Scenery 03 Semester Credits

Theory and practice of scenic design. Orientation to creating elements of stage scenery.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

THEA-1410 Stage Design II - Scenery and Lighting 03 Semester Credits

Examination of scenic design styles. Preparation of floor plan, elevations and colored renderings to use in creating a scale model. Study and practice of stage lighting design.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1400 Stage Design I - Scenery, or departmental approval: prior stage design experience.

THEA-1430 Introduction to Scenery and Stagecrafts 03 Semester Credits

Workshop in technical theatre to include scenery, lighting, costumes, properties and sound by classroom study and laboratory work. Interested students may be assigned to

productions. Repeatable. No more than six credits may be applied to elective degree requirements.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1010 Theatre Appreciation or concurrent enrollment.

THEA-1440 Introduction to Stage Lighting 03 Semester Credits

An introduction to the historical and technical perspectives of the art of lighting design; emphasis on principals of design within the collaborative process. Topics include properties of light and electricity, how these properties can be influenced, and the equipment used to affect theatrical lighting.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

THEA-1500 Acting I 03 Semester Credits

Exploration of theory and practice of basic tools of acting: body movement, vocal production, and imagination. Introduction to character analysis, scene study and improvisation.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

OAN Approved: OAH027

THEA-1510 Acting II 03 Semester Credits

In-depth exploration of theory and application of basic techniques of acting: actor's tools, improvisation, character analysis and scene analysis. Introduction to auditioning. Emphasis on refining imaginative, vocal and physical skills required for creating character.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1500 Acting I, or departmental approval: prior acting experience.

THEA-1520 Improvisation and Performance I 03 Semester Credits

Synthesizes concept and technique through the directed practice of improvisational performance. Utilizes the communal/ensemble exercises provided in Spolin's 'Improvisation for the Theatre' to explore the seven aspects of spontaneity and create narrative improvisations. Also, explores concepts of character, behavior in environment, creating the who? what? and where? of dramatic scenes, creating from given circumstances, and will involve themselves with the special problems of improvisation in performance. Course is primarily active and participatory in nature and culminates with a public performance based on this exploration and discovery.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

THEA-1530 Stagecrafts

02 Semester Credits

Workshop in technical theatre: scenery, lighting, costumes, properties and sound by classroom study and/or by assignment in campus theatrical productions. Repeatable. No more than six credits may be applied to elective degree requirements.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): None.

THEA-1540 Rehearsal and Performance

02 Semester Credits

Practical experience for students accepted as cast members of a College theatre production. May be repeated twice - no more than 4 credits to be applied to elective degree requirements.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Concentrated practice: 14 hours per week.

Prerequisite(s): By audition, or Director/Producer approval.

WAN Approved: OAH025

THEA-1550 Practicum in Technical Theatre

02 Semester Credits

Practical experience in stage work in a department production or department approved special project. Emphasis on backstage assistant, carpentry, painting, design assistant, assistant stage manager, stage manager, or assistant technical director. Repeatable. No more than four credits may be applied to elective degree requirements.

Lecture 00 hour. Laboratory 00 hours.

Other Required Hours: Concentrated practice: 14 hours per week.

Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, or concurrent enrollment.

THEA-1600 Acting for the Camera I

03 Semester Credits

Studio situation to learn basic studio and on-location techniques, video performance training, audio broadcast techniques and to acquire mass media experience for use in professional settings or for personal advancement.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

THEA-2010 Script Analysis

03 Semester Credits

Principles, theories and techniques of play script analysis for actor, director, designer, dramaturg, or playwright.

Lecture 03 hours. Laboratory 00 hours.

Other Required Hours: Additional time out of class to attend at least two theatre productions over the length of the course.

Prerequisite(s): THEA-1010 Theatre Appreciation, or ENG-1010 College Composition I.

WAN Approved: OAH024

THEA-2100 Arts Management

03 Semester Credits

Introduction to principles and methods of management of arts and cultural institutions. Detailed study of organizational structures, funding and revenue, facilities scheduling and production, marketing, community relations and legal issues.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

THEA-2210 History of Theatre and Drama I

03 Semester Credits

History of theatre and drama from its origins to Europe's Renaissance. Includes development of physical theatre, evolution of dramatic presentations, theatrical conventions and theatre techniques.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

THEA-2220 History of Theatre and Drama II

03 Semester Credits

Traces history of theatre and drama from Europe's Renaissance to present theatrical conventions. Beginning where History of Theatre and Drama I ends, development of physical theatre, evolution of dramatic presentations, and theatre techniques are covered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): THEA-2210 History of Theatre and Drama I, or departmental approval.

THEA-2400 Playwriting

03 Semester Credits

Preparation and analysis of short scripts for the stage.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, and THEA-1010 Theatre Appreciation; or departmental approval.

THEA-2440 Sound for Theatre

03 Semester Credits

Introduction to the essentials of theatrical sound. Topics covered include microphone use, microphone placement, amplifications, theatrical acoustics, Foley sound, recorded effects, and production methodology.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, and RAT-1300 Introduction to Recording, and RAT-1310 Studio Operations.

THEA-2450 Drafting For Theatre

03 Semester Credits

Drafting techniques for theatre design and technology students. Topics include plans, elevations, sections, detailed drawings and light plots.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, and THEA-1440 Introduction to Stage Lighting.

THEA-2500 Acting III**03 Semester Credits**

Advanced exploration and refinement of acting techniques as applied to various approaches to creating character. Refinement of audition technique. Focus on scene study and methods of characterization.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1510 Acting II, or departmental approval: prior acting experience.

THEA-2510 Acting IV**03 Semester Credits**

Application of scene analysis skills and methods of characterization to advanced scene styles. Consideration of period demands. Identification of individual approach to acting.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-2500 Acting III, or departmental approval: prior acting experience.

THEA-2520 Improvisation and Performance II**03 Semester Credits**

Synthesize concept and technique through the directed practice of long-form improvisational performance. Apply the skills discovered in Improvisation and Performance to the creation of long-form narrative structures. Develop an advanced improvisational ensemble that performs regularly before a public audience. Apply Spolin's seven aspects of spontaneity to create narrative improvisations from minimal given circumstances. Explore advanced forms of improvisation including musical improvisation, script development from improvisation, subject and incident specific performances and "Harolds". Course is primarily active and participatory in nature and requires participation in numerous public performances based on this exploration.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1520 Improvisation and Performance I.

THEA-2540 Advanced Rehearsal and Performance**02 Semester Credits**

Advanced practical experience for students involved in a college theatre production as cast members or stage managers. May be repeated twice - no more than 4 credits to be applied to elective degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Concentrated practice: 14 hours per week.

Prerequisite(s): THEA-1540 Rehearsal and Performance.

THEA-2550 Advanced Practicum in Technical Theatre**02 Semester Credits**

Advanced practical experience in stage work in a department production or department approved special project. Emphasis in management of the following: offstage operation, carpentry, painting, or set and lighting design. Title positions can include Assistant Stage Manager or Assistant Technical Director. Repeatable. No

more than six credits may be applied to elective degree requirements.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Concentrated practice: 14 hours per week.

Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts.

THEA-2600 Acting for the Camera II**03 Semester Credits**

Video performance training leading to the preparation of sample tapes; audition procedures and conduct; financial aspects of local and national market; director for camera; interaction and shot composition.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): THEA-1600 Acting for the Camera I, or departmental approval: prior experience.

THEA-2740 Internship**03 Semester Credits**

Provides student with on-the-job application of skills learned in the liberal arts and specifically Theatre. Each internship based on individualized learning contract. Requirement for one credit is 180 hours of approved work per semester.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Internship: 180 clock hours of approved work per credit hour.

Prerequisite(s): Department approval: completion of 30 semester credits; completion of 15 semester credits at Cuyahoga Community College; 2.75 GPA; completion of 20 semester credits in liberal arts; completion of 9 semester credits in Theatre; two letters of recommendation from liberal arts faculty, one of which must be from area of placement.

THEA-2830 Cooperative Field Experience**01-03 Semester Credits**

(see current semester Credit Schedule for offerings)

URBAN STUDIES - UST
UST-1010 Introduction to Urban Studies**03 Semester Credits**

Interdisciplinary examination of background of major urban issues and challenges facing U.S. urban areas. Emphasis on description and analysis of roots of contemporary urban America.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

UST-1020 Urban Geography

03 Semester Credits

Geographical study of cities and their demographics. Emphasizes patterns of urbanization, urban life and urban spaces including human behavior and impact of natural resources.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

UST-1120 History of Cleveland

03 Semester Credits

Development of Cleveland from New England village to metropolitan area. Role of economic and technical changes, immigration, reform, world war, demographics, labor unions, transportation and political leadership examined. Rise of suburban areas in post World War II, decline of central city and prospects for revival. Explains how each major era of the city shaped the present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

UST-179H Honors Contract in Urban Studies

01 Semester Credit

Honors Contract complements and exceeds the requirements and objectives for an existing UST 1000-level honors course through the formulation of a contract with a faculty mentor. In conjunction with a faculty mentor, the student will formulate a contract, which upon completion will result in distinctive scholarship. In order to complete the contract, the student is required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Must be taken concurrently with a 1000-level course in Urban Studies, whose instructor approves the Honors Contract.

UST-2020 Urban Cultures

03 Semester Credits

Interdisciplinary examination of cultural diversity within urban populations. Special emphasis on interaction of groups, their social institutions, and value systems.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ANTH-1010 Cultural Anthropology, or SOC-1010 Introductory Sociology, or UST-1010 Introduction to Urban Studies.

UST-2070 Urban Politics

03 Semester Credits

Analysis of the political process and the impact of public policies on urban problems, structures, and political behavior in American cities. Focus on central cities, suburbs, and metropolitan areas. Emphasis on efforts to make cities function more efficiently and to improve quality of life for inhabitants.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): POL-1010 American National Government, or UST-1010 Introduction to Urban Studies.

UST-2640 American Urban History

03 Semester Credits

Comparative growth of American cities from towns to megalopolis. Emphasis on the spatial expansion to the development of urban economy, historical functioning of political system and population changes. Includes urban/suburban and majority/minority issues.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): UST-1010 Introduction to Urban Studies; or HIST-1520 United States History Since 1877; or HIST-2160 African American History 1877-present; or departmental approval.

VETERINARY TECHNOLOGY - VT

VT-1100 Veterinary Medical Terminology

01 Semester Credit

Terminology utilized by veterinary health care professionals and animal owners. Emphasis on identification and definition of word components. Includes spelling, pronunciation, word analysis, common colloquialisms and abbreviations. Usage of medical terms related to all major body systems.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

VT-1200 Veterinary Law and Ethics

01 Semester Credit

Overview of history and status of animals in American law and effect on modern veterinary technician. Discussion of ethical questions and dilemmas commonly encountered in veterinary medicine. Overview of regulatory agencies (state and federal) that affect and oversee veterinary technicians. Discussion of veterinary technician's role in malpractice situations.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

VT-1320 Veterinary Office Applications

03 Semester Credits

Overview of veterinary practice management including veterinary medical record keeping, marketing, facility design, staff responsibilities, interoffice communications, and public relation techniques. Automated veterinary office processing and recordkeeping. Computer hardware and software commonly found in small to mid-sized veterinary practices described along with office procedures and work flow.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval.

VT-1401 Veterinary Science I

04 Semester Credits

Recognition of physical and behavioral characteristics of commonly encountered dog and cat breeds. Introduction to basic companion animal and laboratory animal behavior, husbandry and nutrition. Laboratory focuses on non-invasive clinical management techniques including physical examination, grooming, and other in-office procedures.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): Departmental approval: admission to program.

VT-1451 Veterinary Diagnostic Imaging

02 Semester Credits

Introduction to radiography, ultrasonography, CT, MRI, and nuclear scintigraphy imaging modalities. Preparation, use and maintenance of radiography and ultrasonography equipment. Acquisition and processing of digital and analog diagnostic images.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): VT-1100 Veterinary Medical Terminology; and VT-1401 Veterinary Science I; and BIO-1420 Anatomy and Physiology of Domestic Animals II or concurrent enrollment.

VT-1500 Veterinary Science II

04 Semester Credits

Recognition of physical and behavioral characteristics of commonly encountered breeds of horses, cattle, sheep and pigs. Basic food animal and equine behavior, husbandry and nutrition. Laboratory focuses on restraint, handling and performance of common veterinary procedures used as part of large animal management and/or treatment of common clinical conditions. Field trips included in laboratory portion of course.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): VT-1401 Veterinary Science I, VT-1100 Veterinary Medical Terminology and VT-1200 Veterinary Law and Ethics, and BIO-1420 Anatomy and Physiology of Domestic Animals II, or concurrent enrollment.

VT-1520 Veterinary Parasitology

02 Semester Credits

Study of identification techniques, nomenclature, life cycles, epidemiology and control of internal and external parasites of small animals, horses and cattle.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): VT-1100 Veterinary Medical Terminology; VT-1200 Veterinary Law and Ethics; BIO-1420 Anatomy and Physiology of Domestic Animals II or concurrent enrollment, and departmental approval: admission to program.

VT-1600 Veterinary Surgical Nursing and Assisting

03 Semester Credits

Fundamentals of routine veterinary surgery including instrumentation, patient preparation, aseptic technique, fluid therapy, wound healing, specialized procedures and general nursing care. Fundamentals of electrocardiography including operation of

electrocardiograph, origin of the ECG tracing and recognition of common cardiac arrhythmias.

Lecture 01 hours. Laboratory 06 hours.

Prerequisite(s): VT-1401 Veterinary Science I, and BIO-1420 Anatomy and Physiology of Domestic Animals II or concurrent enrollment.

VT-2300 Pharmacology for Veterinary Technicians

02 Semester Credits

Introduction to veterinary pharmacology including common drug terminology, classifications and usages of drugs, dosage calculations, methods of drug administration, side effects and contraindications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): VT-1200 Veterinary Law, and VT-1401 Veterinary Science I, and BIO-1420 Anatomy and Physiology of Domestic Animals II.

VT-2401 Veterinary Pathology I

02 Semester Credits

Veterinary hematology and chemistry laboratory procedures including complete blood counts and clinical chemistries performed commonly in veterinary practices.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): BIO-1420 Anatomy and Physiology of Domestic Animals II, and BIO-2500 Microbiology or concurrent enrollment; and VT-1520 Veterinary Parasitology.

VT-2411 Veterinary Pathology II

02 Semester Credits

Veterinary medical laboratory procedures performed commonly in veterinary practices including urinalysis, veterinary microbiologic techniques, vaginal cytology, ear cytology, cytology of tissues and fluids, bone marrow evaluation, serology, coagulation tests and necropsy.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): VT-2401 Veterinary Pathology I.

VT-2500 Small Animal Health and Disease

02 Semester Credits

Physiological systems approach to the most frequently encountered diseases and metabolic problems of dogs and cats including disease names, definition and history, animals at risk, causes and signs, diagnosis, treatment and prevention.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): VT-2300 Pharmacology for Veterinary Technicians.

VT-2510 Large Animal Health and Disease

02 Semester Credits

Study of the most frequently encountered diseases and clinical problems of horses, cows, sheep and swine including disease names, definition and history, animals at risk, causes and signs, treatment and prevention.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): VT-2300 Pharmacology for Veterinary Technicians.

VT-2600 Anesthesiology, Emergency Techniques and Dentistry

03 Semester Credits

Fundamentals of veterinary anesthesiology, emergency medicine and veterinary dentistry. Students learn how to administer and monitor anesthesia, assist with cardiopulmonary resuscitation, and perform routine veterinary dental prophylactic techniques.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VT-1600 Veterinary Surgical Nursing and Assisting, VT-2300 Pharmacology for Veterinary Technicians, and VT-1500 Veterinary Science II.

VT-2700 Avian and Exotic Animal Medicine

02 Semester Credits

Introduction to avian and exotic animal husbandry, physical examination, clinical procedures, and common clinical conditions. Field trips may be included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): VT-1520 Veterinary Parasitology, and BIO-2500 Microbiology and VT-2600 Anesthesiology, Emergency Techniques and Dentistry.

VT-2851 Veterinary Practicum and Seminar I

01 Semester Credit

Includes practicum and on-campus seminar. In practicum, students observe and assist with common procedures in clinical settings. Clinical settings include small animal practice, animal population control facility, laboratory animal facility, equine practice, food animal practice/facility, and exotic animal practice/facility. In seminar, students discuss individual clinical situations occurring during practicum experience and study technician's role in euthanasia of an animal including methodology, mental preparation, and understanding of the grieving owner.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 3 1/2 hours per week.

Seminar: 1/2 hour per week.

Prerequisite(s): VT-1500 Veterinary Science II.

VT-2860 Veterinary Practicum and Seminar II

02 Semester Credits

Includes practicum and on-campus seminar. In practicum, students observe and assist with common procedures in clinical settings. Clinical settings include small animal practice, animal population control facility, laboratory animal facility, equine practice, food animal practice/facility, and exotic animal practice/facility. In seminar, students discuss individual clinical situations occurring during the veterinary practicum experience, study the technician's role in pediatrics and first aid, and prepare to search for employment.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): VT-2851 Veterinary Practicum and Seminar I.

VT-2940 Veterinary Field Experience

02 Semester Credits

Capstone course in Veterinary Technology. Clinical experience involving the practice of techniques commonly used in veterinary medicine. Students assigned to two different types of veterinary facilities. Site options may include small animal practices, animal emergency clinics, referral practices, equine practices, mixed practices, food animal practices, laboratory animal facilities, and the Cleveland Metroparks Zoo.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 24 hours per week.

Prerequisite(s): VT-2860 Veterinary Practicum and Seminar II, and VT-2600 Anesthesiology, Emergency Techniques and Dentistry.

VISUAL COMMUNICATION AND DESIGN

- VC&D

VC&D-1000 Visual Communication Foundation

03 Semester Credits

Develop skills needed to communicate visually in any media. Learn how effective layouts, illustrations, photographs, videos, and web sites convey ideas via the principles of visual communication and design.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

VC&D-1015 Digital Studio Basics

03 Semester Credits

Hands-on overview of industry standard design software for print and digital media. Best practices in studio workflow and file management are emphasized.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

VC&D-1061 History of Graphic Design

03 Semester Credits

Survey of graphic design and the world events that have influenced visual communication from the invention of writing to the computer age and new media. Explores the cultural influences and technical innovations in graphic design movements, subsequent counter-movements, and their implications. The influence of world events and the emergence of trends in graphic design will be presented following an historical timeline. The impression of the past on subsequent graphic design trends will be noted.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

VC&D-1200 Typography and Layout

03 Semester Credits

Development, terminology, letterform, classification, selection and specification of typefaces. Emphasis on aesthetic and communicative aspects of typography. Introduction to techniques used to design and effectively communicate with typography.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-1000 Visual Communication Foundation, or concurrent enrollment; and VC&D-1015 Digital Studio Basics, or concurrent enrollment.

VC&D-1430 2D Design

03 Semester Credits

Technical and aesthetic fundamentals in the creation of two-dimensional designs for print, interactive, broadcast and other media utilizing industry standard 2D graphics and design applications.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-1015 Digital Studio Basics, or concurrent enrollment; or VC&D-1000 Visual Communication Foundation, or ART-1080 Visual Design I.

VC&D-1940 Field Experience I

01-03 Semester Credits

Field experience is planned paid or unpaid work activity, which relates to an individual student's occupational objectives. With permission of a faculty advisor, field experience replaces elective courses in student's associate degree program. Experience coordinated by faculty member who assists student in planning experience, visits site of experience for conference with student and his/her supervisor at least once during semester, and assigns course grade to student after appropriate consultation with employer/supervisor.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12-36 hours per week.

Prerequisite(s): Departmental approval.

VC&D-2301 Graphic Design and Illustration

03 Semester Credits

Exploration of advanced tools and techniques used in illustrating content for integrated media. Projects may include advanced content creation for print, interactive, broadcast, and other media utilizing industry standard 2D graphics and design applications.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-1430 2D Design or concurrent enrollment.

VC&D-2401 Designing for Production

03 Semester Credits

Techniques and methods in assembling and finalizing production art and design for printing and digital media. Terminology, paper, ink, printing, production art and design. Tools, materials, and practical considerations in preparing design for production art.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VCGD-2231 Publication Design.

VC&D-2530 Professional Practice in Visual Communication and Design

03 Semester Credits

Exploration of business and marketing practices necessary for successful career in visual communication and design. Emphasis on financial, legal, organizational, promotional, interpersonal and ethical skills as practiced in this diverse industry.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: sophomore level status or industry experience.

VC&D-2541 Individual Projects

03 Semester Credits

Individual projects in visual communication and design in areas of student's choice. Progress and grading determined on individual basis according to criteria mutually agreed upon between student and instructor. May be repeated for up to six credits.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VC&D-1430 2D Design or departmental approval.

VC&D-2600 Graphic Production

02 Semester Credits

Techniques and methods in assembling and finalizing production art and design for printing and other media. Emphasis on preparation and practical considerations for various electronic media.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): VC&D-2401 Designing for Production or concurrent enrollment.

VC&D-2701 Media Design

03 Semester Credits

Designing for electronic media, from concept to completion. Explores the interaction of type, image, motion, sound, sequence and how they communicate, as well as technical challenges of designing for various digital media.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-1430 2D Design; or VCIM-1570 Web Publishing I: HTML; or concurrent enrollment; or ITWM-1010 Creating Web Pages with HTML and JavaScript or concurrent enrollment; or departmental approval.

VC&D-2830 Cooperative Field Experience
03 Semester Credits

Open to students eligible for the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester. May be repeated for an accrued maximum of nine credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 180 clock hours of approved work per credit hour.

Prerequisite(s): Formal application into the Cooperative Education program.

VC&D-2940 Field Experience II
01-03 Semester Credits

Field experience is planned paid or unpaid work activity, which relates to individual student's occupational objectives. With permission of faculty advisor, field experiences replace elective courses in student's associate degree program. Experience coordinated by faculty member who assists student in planning experience, visits site of experience for conference with student and his/her supervisor at least once during semester, and assigns course grade to student after appropriate consultation with employer/supervisor. May be repeated for a maximum of six credits.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field experience: 12 to 36 hours per week.

Prerequisite(s): Departmental approval.

VC&D-2991 Portfolio Preparation
03 Semester Credits

Capstone course in Visual Communication and Design. Covers all aspects of creation and presentation of professional portfolio. Emphasize individual strengths and areas of specialization. Students edit and modify work where required. Add new pieces to final portfolio that meets industry standards. Analyze appropriate presentation materials, business forms and protocols, develop promotional pieces and presentation style and techniques.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VC&D-2301 Graphic Design and Illustration, or concurrent enrollment; or VC&D-2701 Media Design, or concurrent enrollment; or VCDV-2280 Advanced Digital Video and Digital Filmmaking: Exploring Genre and Technique, or concurrent enrollment or VCIM-2200 Game Design III: Game Design Studio, or concurrent enrollment VCIM-2280 Web Publishing III: Media Rich Websites; or concurrent enrollment.

VISUAL COMMUNICATION AND DESIGN
(Digital Video and Digital Filmmaking) -
VCDV

VCDV-1180 Introduction to Digital Video and Digital Filmmaking

03 Semester Credits

Provides a strong technical foundation for further study and practice in the art and technology of motion media. Analysis of examples of visual storytelling with regard to how lighting, color palette, picture composition, sound, performance, staging, editing and graphics work in concert to communicate theme. Hands-on instruction in producing and maintaining desired image and sound quality in production and post-production. Introduces the three phases of a media production: Pre-production, Production, Post-production.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1015 Digital Studio Basics or concurrent enrollment.

OAN Approved: OCM008

VCDV-2180 Digital Cinematography

03 Semester Credits

Focus on issues facing Directors of Photography, Camera Operators, and Digital Imaging Technicians, working in digital motion media acquisition. Discussion of current options in acquisition format motion media and the limitations vs. advantages of a variety of cameras, lights, and related grip equipment. Focus on understanding crew roles and set etiquette. Hands-on experience in digital cinematography: learning to control a variety of lighting instruments to produce desired effects. Emphasis on the practical use of light, color, picture composition, and camera movement to communicate a mood or theme.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCDV-1180 Introduction to Digital Video and Digital Filmmaking.

VCDV-2280 Advanced Digital Video and Digital Filmmaking: Exploring Genre and Technique
03 Semester Credits

This intensive, intermediate-level course emphasizes style and technique for scripting, shooting, and editing digital video productions and a variety of genres. Editing styles for music video (cutting to the beat), narrative (continuity editing), documentary footage, and experimental are examined in relation to film theory and visual design principles. Hands-on use of cameras, lighting, and sound design equipment for digital video in the context of actual productions. Students utilize digital workstations and industry standard online editing applications. Students take a film through all stages of a production from pre-production planning to post production. Emphasis on collaboration.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCDV-1180 Introduction to Digital Video and Digital Filmmaking, and VCDV-2180 Digital Cinematography or departmental approval: previous coursework and/or experience.

VCDV-2380 Visual Effects Compositing for Digital Video**03 Semester Credits**

Focus on planning, producing and editing visual effects (VFX) and special effects (SFX) for film and video. Students digitally combine multiple video and graphic sources to create convincing moving image composites. Emphasis on shot composition, matching lighting, camera angles and movement. Hands-on projects involve green screen filming, motion mattes, vector-based animation for mattes, titles and motion graphics, rotoscoping and digital painting.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1430 2D Design; and VCDV-1180 Introduction to Digital Video and Digital Filmmaking, and VCDV-2180 Digital Cinematography; or departmental approval: previous coursework and/or experience.

VCDV-2480 Motion Graphics for Digital Video**03 Semester Credits**

Focus on combining visual elements from a variety of sources into a composite motion graphic. Projects include film titles, logo animation, broadcast graphics, and kinetic digital display. Emphasis on the interplay of typography, animated graphics, movie clips and sound. Exploration of the literal and stylistic communication of meaning through interaction of type and image.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1430 2D Design; and VCDV-1180 Introduction to Digital Video and Digital Filmmaking, and VC&D-1200 Typography and Layout; or departmental approval: previous coursework and/or experience.

VCDV-2580 Digital Versatile Disk (DVD) Authoring and Design**03 Semester Credits**

Focus on planning, designing, and executing a digital versatile disk (DVD). Topics include theory of DVD interface, history of DVD technology, basic non-linear editing, basic audio editing, exporting MPEG2 video and audio streams, developing flowcharts and storyboards for DVD interface, and designing still and motion menus.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1430 2D Design; and VCDV-1180 Introduction to Digital Video and Digital Filmmaking; or department approval: previous coursework and/or experience.

VCDV-2680 Advanced Digital Cinematography**03 Semester Credits**

Focus on advanced issues facing directors of photography working in digital video both in the studio and on location. Current acquisition formats for motion media productions and limitations vs. advantages of a variety of standard and high definition digital video formats discussed. Gain professional level competency in digital cinematography technologies, including controlling lighting instruments and cameras, to produce desired effects for a variety of motion media. Emphasis on practical use of light, color, picture composition, and camera movement to communicate a mood or theme, and how the craft of cinematography is used as a storytelling device.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCDV-2180 Digital Cinematography, and VCDV-1180 Introduction to Digital Video and Digital Filmmaking, or department approval.

VCDV-2780 Advanced Motion Graphics**03 Semester Credits**

Focus on technical proficiency in industry-standard motion graphics software application. Builds upon concepts and techniques introduced in VCDV-2480 Motion Graphics.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCDV-2480 Motion Graphics for Digital Video, or departmental approval: equivalent work experience.

**VISUAL COMMUNICATION AND DESIGN
(Graphic Design) • (Advertising Design)-
VCAD/VCGD**

**VCAD-2520 Creative Advertising Campaign
03 Semester Credits**

Advertising campaign from initial campaign concept through presentation. Conceptual thinking and problem-solving for magazine, billboard, and TV/video storyboard advertising. Various facets of advertising agency structure, including the team concept. Designer's role in research, analysis, planning, conceptualizing, copywriting and presentation.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VCGD-1500 Advertising and Design, or departmental approval.

**VCAD-2621 Advertising Studio I
03 Semester Credits**

Hands-on directed individualized project-based course specialized for advertising design majors. Advertising design and marketing project proposals to be selected, approved, and arranged collaboratively between instructor and student. Design creativity, marketing, and visual communication skills stressed. Emphasis on further developing advertising and marketing skills and working one-on-one with instructor providing design direction to attain conceptual and technical skills to bring final designs to successful completion.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VC&D-2301 Graphic Design and Illustration or VCGD-2231 Publication Design.

**VCAD-2721 Advertising Studio II
03 Semester Credits**

Advanced projects for advertising design majors simulating real-world professional and practical experience as set in ad agencies and corporate marketing studios. Development of ad campaigns, double-spread ads, multi-page marketing layouts and publications. Practical experience in teamwork collaboration, advanced delivery techniques for print and/or other media, production processes, budget development and meeting client's needs within set timelines.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VCAD-2621 Advertising Studio I.

**VCGD-1500 Advertising and Design
03 Semester Credits**

Fundamentals of advertising and design for print and other media. Examines design process and appropriate use of research. Examines and evaluates layout and delivery mode, evolution of presentation from thumbnail to storyboard, and critical analysis of designer/client

relations. Includes material usage, technical and hand skill development, and application of presentation techniques to real-world problem solving.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-1200 Typography and Layout, and VC&D-1430 2D Design or concurrent enrollment.

**VCGD-2131 Magazine Design
03 Semester Credits**

Magazine design including masthead, cover, contents, editorial and feature page formats. Emphasis on using sophisticated design, typography, and images to communicate. Exploration of practical and production considerations involved in magazine design as a product itself.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VCGD-1500 Advertising and Design.

**VCGD-2231 Publication Design
03 Semester Credits**

Publication design including masthead, column, editorial and feature story page formats. Emphasis on using typography and images on multiple page formats. Exploration of practical and production considerations involved in publication design.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VCGD-1500 Advertising and Design, or departmental approval.

**VCGD-2331 Brand Identity Design
03 Semester Credits**

Comprehensive corporate graphics emphasizing design process in creating corporate and brand identity. Visual and non-visual aspects of corporate graphics and brand applications will be explored. Emphasis will be placed on logo design and brand application design in order to create a cohesive corporate brand identity.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-2301 Graphic Design and Illustration; or concurrent enrollment.

**VCGD-2431 Package Design
03 Semester Credits**

Comprehensive package design course from initial concept to presentation of package mock-ups. Conceptual thinking and problem solving using typography, color and images on folded, soft packaging and rigid packaging. Methods, materials, practical and production considerations involved in packaging design as well as environmental issues in relation to green or sustainable package design.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-2301 Graphic Design and Illustration or concurrent enrollment; or departmental approval.

Visual Communication and Design (Graphic Design – Advertising Design) • (Illustration)

VCGD-2631 Graphic Design Studio

03 Semester Credits

Advanced graphic design projects using industry software and standards. Course builds upon sequential graphic design courses to explore complex solutions to visual communication and design problems. Emphasis on individual and team projects applied to contemporary design media.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VCGD-2231 Publication Design or concurrent enrollment.

VCGD-2730 Graphic Design Studio II

02 Semester Credits

Advanced projects for graphic design majors simulating real-world professional and practical experience as set in graphic design and production design studios. Emphasis on development and design of spreads, multi-page layouts and publications. Practical experience in teamwork collaboration, advanced featuring delivery techniques for print and/or other media, production processes, budget development, and meeting client's needs within set timelines.

Lecture 01 hour. Laboratory 02 hours.

Prerequisite(s): VC&D-2200 Multi-Page Layout and Design or concurrent enrollment, or VCGD-2631 Graphic Design Studio I or concurrent enrollment.

VISUAL COMMUNICATION AND DESIGN (Illustration) - VCIL

VCIL-1141 Rendering Techniques

03 Semester Credits

Analog and digital rendering for visual communication and design applications. Emphasis on formal qualities of two dimensional illustration techniques used to render images.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1015 Digital Studio Basics; or concurrent enrollment.

VCIL-1640 3D Design

03 Semester Credits

Technical and aesthetic fundamentals of 3D design. Use of industry standard software to develop 3D graphics for screen and print applications. Projects may include 3D design and visualization for information graphics, product visualization, prototyping, logo design, and environmental visualization. Various design techniques, including 3D parametric modeling, polygonal modeling

and NURBS/HyperNURBS based modeling solutions.

Introduces basic modeling, staging, lighting, texture and shader strategies to realize 3D concepts.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VC&D-1015 Digital Studio Basics or concurrent enrollment; or departmental approval.

VCIL-2040 3D Motion

03 Semester Credits

Technical and aesthetic fundamentals of 3D motion design and 3D animation. Use of industry standard software to develop 3D animation for broadcast and Internet audience. Projects may include 3D motion graphics and animation for information graphics, product visualization, instructional design, and environmental visualization. Various topics, including 3D modeling, key framing, timeline and camera animation. Introduces basic animation strategies to complete 3D motion graphics and visualization concepts.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): VCIL-1640 3D Design or concurrent enrollment; or departmental approval.

VCIL-2141 Illustration Techniques

03 Semester Credits

Use of industry standard tools to explore formal and aesthetic solutions for two-dimensional still images. Emphasis on experimentation with aesthetic and technical elements of digital illustration.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIL-1141 Rendering Techniques or concurrent enrollment.

VCIL-2241 Advanced Illustration

03 Semester Credits

Various tools, materials and techniques used with advanced illustration. Emphasis placed on illustration for commentary, narrative, persuasion, visualization and instruction. Focus on creating illustration for audience and client requirements.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIL-1141 Rendering Techniques or concurrent enrollment.

VCIL-2341 Illustration for Story, Sequence & Narrative

03 Semester Credits

Technical and aesthetic fundamentals of sequential illustration. Use of industry standard software to design, develop, publish and present illustration for narrative application. Introduces basic strategies of illustration for concept art, comics, books, graphic novels, games, storyboards and other work driven by narrative, story or sequential imagery.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIL-1141 Rendering Techniques and VCIL-1640 3D Design.

VCIL-2440 3D Simulation

03 Semester Credits

Advanced technical and aesthetic issues concerning 3D modeling, 3D motion graphics, 3D animation and 3D simulation using industry standard software. Course emphasizes static and dynamic animation strategies utilizing joints, kinematics, dynamics, constraints, set driven keys, rigid body dynamics, effectors and node based animations to create product, instructional, character or environmental 3D simulations and animations. Applied projects for use in various visualization and game design disciplines.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIL-2040 3D Motion or departmental approval.

VCIL-2540 3D Studio

03 Semester Credits

Advanced 3D modeling, 3D motion graphics and 3D animation using industry standard software. Course builds upon sequential 3D courses to provide advanced platform for custom 3D design, illustration, visualization, simulation or animation projects. Develop projects to satisfy audience/client, target market and production needs.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIL-2040 3D Motion or departmental approval.

VCIL-2641 Illustration Studio

03 Semester Credits

Hands-on, directed, individualized, project-based course, specialized for illustration majors. Illustration proposals and projects to be selected, approved and arranged collaboratively between instructor and student. Emphasis on illustration for various audiences including, design, advertising, visualization, publishing and entertainment industries.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VCIL-2341 Illustration for Story, Sequence & Narrative or concurrent enrollment.

VCIL-2741 Illustration Studio II

03 Semester Credits

Advanced projects for illustration majors simulating real-world professional and practical projects.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VCIL-2641 Illustration Studio or concurrent enrollment.

**VISUAL COMMUNICATION AND DESIGN
(Photography) - VCPH**

VCPH-1050 Black and White Photography I

03 Semester Credits

Introduction to technical and aesthetic fundamentals of black and white photography. Camera operation, exposure and development of film and printing techniques, and aesthetics of contemporary photography. Student must provide own camera, film, and printing paper.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

OAN Approved: OAH006

VCPH-1150 History of Photography

03 Semester Credits

Survey of history of world photography from 1839 to present. Technical and aesthetic evolution of photography and its changing role in society.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

VCPH-1261 Photography I

03 Semester Credits

Explore the fundamentals of digital capture, digital output, and learn how to maximize the capabilities of a digital camera shooting in available light. Conceptual issues and stylistic characteristics of several photographic genres discussed. Visual assignments used to explore a variety of photographic traditions and increase understanding of digital technology, while expanding critical thinking and the conceptual photographic eye. Students must have their own digital camera with manual controls including Aperture, Shutter Speed and ISO settings. RAW format capability is highly recommended. College specified digital printing paper, a portfolio box and a MAC/PC external hard-drive are required as well. Paper, box, binder and a limited selection of cameras available at Tri-C bookstores.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

OAN Approved: OAH002

VCPH-1450 Digital Imaging I

03 Semester Credits

Introduction to technical and aesthetic fundamentals of digital image manipulation using the most current computer software and hardware systems for the input, modification and output of digital photographs.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

VCPH-2050 Commercial Studio Techniques I
03 Semester Credits

Introduction to the use of strobe lighting and direct digital capture in commercial studio and location photography environments. Topics include an introduction to portraiture, product, food, fashion, and advertising photography. Efficient workflow in the creation and post-production of appropriately formatted digital files. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College-specified digital printing paper and portfolio box also required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-1450 Digital Imaging I, or concurrent enrollment; and VCPH-2260 Photography II, or concurrent enrollment; or departmental approval: submission of portfolio of photographs.

VCPH-2260 Photography II
03 Semester Credits

Students build on their skill base and create images that have a conceptual basis as opposed to being strictly documentary in nature. Advanced color and black & white file conversion and outputting. Critical thinking used in group work discussions. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College-specified digital printing paper and portfolio box also required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-1261 Photography I and VCPH-1450 Digital Imaging I, or concurrent enrollment.

VCPH-2450 Digital Imaging II
03 Semester Credits

Advanced visual problem solving in digital imaging. Refined techniques for compositing and digital illustration in commercial based environments. Photographic images and components supplied and created by the student form the foundation on which projects are built for print, multimedia, and Web applications.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-1450 Digital Imaging I, or departmental approval: prior digital imaging experience.

VCPH-2541 Individual Projects - Photography
03 Semester Credits

Individual photography-based projects created in areas of student's design, based on submission and approval of a written proposal. Progress and grading determined on individual basis according to criteria mutually agreed upon between student and instructor. Includes examples of projects created by photographers from many photographic genres including fine art, documentary, advertising and editorial as well as work done by the

instructor. Other media such as audio, video, and integrated web-based options such as web sites and blogs will be shown and discussed. May be repeated for up to six credits.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-1450 Digital Imaging I, and VCPH-2260 Photography II or departmental approval with submission of a photographic print or high resolution digital portfolio.

VCPH-2550 Commercial Studio Techniques II
03 Semester Credits

Advanced lighting and camera techniques for commercial studio and location photography. Concept development for photo illustration. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College-specified digital printing paper and portfolio box also required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-2050 Commercial Studio Techniques I, and VCPH-1450 Digital Imaging I, or departmental approval: submission of portfolio of photographs.

VCPH-2660 Photography III
03 Semester Credits

Advanced studio and documentary photographic techniques. Advanced critical thinking and responsive writing. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College-specified digital printing paper and portfolio box also required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-1450 Digital Imaging I; and VCPH-2260 Photography II; or departmental approval: submission of portfolio of photographs.

VCPH-2760 Editorial Photography
03 Semester Credits

Introduction to the technical, aesthetic, business and ethical issues in a range of photographic practices including editorial, wedding, event, and photojournalistic settings. Students must have their own digital camera with adjustable settings and the ability to capture in Camera RAW format. College-specified digital printing paper and portfolio box also required.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCPH-1450 Digital Imaging I, and VCPH-2260 Photography II, or departmental approval: submission of portfolio of photographs.

OAN Approved: OCM011

VCPH-2990 Photographic Portfolio Preparation
02 Semester Credits

Capstone course for Visual Communication and Design - Photography. Covers all aspects of the creation and presentation of a professional photographic portfolio and web presence. Portfolios emphasize individual strengths and areas of specialization. Edit and modify existing work for the portfolio where required; complete the final portfolio to the standards of the photography industry. Analysis of appropriate presentation and business materials and protocols, development of self-promotional pieces, and discussion of presentation styles and techniques, both traditional and digital.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): VCPH-2550 Commercial Studio Techniques II, and VCPH-2450 Digital Imaging II or departmental approval: sufficient quantity of successfully completed work for portfolio inclusion. This is the capstone course for photography students.

VISUAL COMMUNICATION AND DESIGN
(Web and Interactive Media) - VCIM

VCIM-1200 Game Design I: Introduction to Game Design
03 Semester Credits

Foundation of game design with an emphasis on concept, planning and creation of game prototypes. Topics include history of games from tabletop to tablet, markets, mechanics, prototyping, play testing, and analysis. Students will explore theme, genre, rules, tools, goals, and peripheral concepts of game design.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1015 Digital Studio Basics, or concurrent enrollment; and VCIL-1640 3D Design, or concurrent enrollment.

VCIM-1400 Game Design II: Game Engines
03 Semester Credits

Applied technical and aesthetic fundamentals of 2D and 3D game design using industry-standard game engines. Emphasis on design and interaction of 2D and 3D assets to be used in instructional, promotional, and entertainment games.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-1200 Game Design I: Introduction to Game Design, or concurrent enrollment or departmental approval.

VCIM-1570 Web Publishing I: HTML
03 Semester Credits

Foundational web design, planning and construction with emphasis on web standards, usability and accessibility. Students construct web pages in (X)HTML and CSS using basic text-editing software. Topics include analysis of how and why a website succeeds or fails, aesthetics and visual

design for web, planning, creation, uploading and registration of sites, troubleshooting, search engine optimization and basic marketing strategies.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VC&D-1000 Visual Communication Foundation; or concurrent enrollment, and VC&D-1015 Digital Studio Basics; or concurrent enrollment or concurrent enrollment.

VCIM-1770 Web Publishing II: Site Theory & Construction
03 Semester Credits

Expansion and continuation of topics introduced in Web Publishing I. Planning, designing, constructing and publishing a web site using industry standard tools.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-1570 Web Publishing I: HTML, or concurrent enrollment; or ITWM-1010 Creating Web Pages with HTML and JavaScript.

VCIM-1970 Midpoint Portfolio Review
01 Semester Credit

Sophomore level portfolio review. Individual strengths and areas of specialization are reviewed and evaluated. Students are encouraged to edit and modify existing work to prepare for advanced courses, projects, and final portfolio.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: completion of 18 core credits at 1000 level, or completion of 9 core credits and concurrent enrollment of an additional 9.

VCIM-2071 Service-Learning Web and Interactive Studio
03 Semester Credits

A service-learning course. Web and Interactive Media students will work on "real-world", client based community projects for non-profit organizations. Design, technical, and professional practices such as contracts, client relations and team work will be put into action.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-2280 Web Publishing III: Media Rich Websites, or concurrent enrollment VCIM-2380 Interactive Media II: App Design, or concurrent enrollment departmental approval.

VCIM-2200 Game Design III: Game Design Studio
03 Semester Credits

Create a variety of game projects for an intended audience, platform or device. Course emphasizes game design pipeline of planning, design, testing, refining, and publishing.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): VCIM-1400 Game Design II: Game Engines or departmental approval.

VCIM-2270 Animation for the Web and Media

03 Semester Credits

[This course is cross-listed as ART-2151. Credit can only be applied to degree requirements once for either course.]

Technical and aesthetic fundamentals of 2D animation as they pertain to the Internet. Use of current software to develop interactive, animated graphics and interfaces.

Various techniques including tweening, frame by frame, onion skinning, shape and color morphing as well as non-linear structure, interactivity, communication, scripting and troubleshooting. Acquisition or creation and integration of music, sound and video. May be repeated for up to 9 credits; only 3 credits may be applied to degree requirements.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): ART-1080 Visual Design I, or ART-1091 Color Theory and Application, or VC&D-1015 Digital Studio Basics or departmental approval: comparable skills.

VCIM-2280 Web Publishing III: Media Rich Websites

03 Semester Credits

Developing media rich websites with JavaScript, jQuery or Flash. Emphasis includes building SEO (Search Engine Optimization) and responsive, device-friendly websites that integrate social media, videos, photos and music.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-1770 Web Publishing II: Site Theory & Construction, or ITWM-1010 Creating Web Pages with HTML and JavaScript.

VCIM-2290 Web Publishing IV: Data Driven Sites

03 Semester Credits

Learn to create data driven, dynamic websites. Combines an overview of programming terms and concepts with practical examples.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): ITWM-1010 Creating Web Pages with HTML and JavaScript or VCIM-1570 Web Publishing I: HTML.

VCIM-2371 Interactive Media I

03 Semester Credits

Create a variety of interactive projects. Tell stories incorporating photos, video, sound, music, narration, typography, illustration and animation. Structure, communication, scripting, sequencing and troubleshooting emphasized.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-2270 Animation for the Web and Media, or VCIL-1640 3D Design; or departmental approval.

VCIM-2380 Interactive Media II: App Design

03 Semester Credits

Explores current and emerging interactive technologies such as Apps, touch screens and games. May be repeated twice for credit; only 3 credits can apply to meet degree requirements.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-2280 Web Publishing III: Media Rich Websites or VCIM-2371 Interactive Media I.

VCIM-2400 Game Design Portfolio

03 Semester Credits

Develop and refine a body of work focusing on specific role(s) in the game design industry. Develop and promote assets, projects, portfolio, demo reel, blog and game presentation.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): VCIM-2200 Game Design III: Game Design Studio, or concurrent enrollment

VCIM-2470 Virtual Reality Imaging

02 Semester Credits

Technical and aesthetic concepts of virtual reality photography. Use of computer hardware and software for creating virtual reality images. Images used for interactive onscreen presentations or output as large scale panoramic photographic prints.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): VCPH-1450 Digital Imaging I, and VC&D-1010 Macintosh Basics; or departmental approval.

VCIM-2571 Interactive Media Studio

03 Semester Credits

Course offers broad possibilities for the conception and creation of advanced interactive projects. Students are encouraged to explore concepts and techniques beyond the parameters of previous course work. Individual students or teams work with the instructor to set the criteria, research, and ultimately complete the project. Repeatable: students may pursue different projects for up to six credits.

Lecture 01 hour. Laboratory 05 hours.

Prerequisite(s): VCIM-1970 Midpoint Portfolio Review or VCIM-2200 Game Design III: Game Design Studio; or concurrent enrollment; or departmental approval.

VCIM-2940 Field Experience

03 Semester Credits

Planned work activity, paid or unpaid, in the field of Web or Interactive Media. Coordinated by faculty member and employer. Experience should reinforce classroom/lab skills.

Lecture 00 hours. Laboratory 00 hours.

Field experience: 36 hours per week, working in the field.

Prerequisite(s): VCIM-2380 Interactive Media II, or concurrent enrollment; or VCIM-2290 Web Publishing IV: Data Driven Sites, or concurrent enrollment.

WOMEN'S STUDIES - WST

WST-1510 Introduction to Women's Studies

03 Semester Credits

Introduction to field of women's studies, which transcends traditional disciplinary boundaries. Analysis of gender's role in shaping human societies of past and present: their history and experiences, their expression through arts and literature, philosophy of feminism, and comparative conditions of women in diverse cultures.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

WST-1520 Women's Films

03 Semester Credits

Introduction to genre of women's films through study of classic and contemporary depictions. Use of film analysis in theme, character, plot, dramatic conflict, photography, sound, light, editing, and acting.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

WST-200H Honors Women and Reform

03 Semester Credits

Analysis of the reform roles of women in American history from colonial times to the present as individuals and as organized groups; special focus on social movements and institutionalized reforms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, or WST-1510 Introduction to Women's Studies.

WST-2010 Women in the World

03 Semester Credits

Study of the role of gender in shaping comparative cultural experiences in the world; analysis of theoretical basis of gender; and comparing status of women in work, politics, and other social institutions.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): WST-1510 Introduction to Women's Studies, or ENG-1010 College Composition I.

WST-2020 Women, Science and Technology

03 Semester Credits

[This course is cross-listed as HIST-2020. Credit can only be earned once for either course.] Study of gendered relationships in scientific theory, organization and dissemination of scientific expertise, and technological development, and the impact of these on health care, medicine, business, manufacturing, cultural norms and women's experience.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): WST-1510 Introduction to Women's Studies or ENG-1010 College Composition I; or concurrent enrollment; or ENG-101H Honors College Composition I, or concurrent enrollment.

WST-2030 Women and Art

03 Semester Credits

Analysis of women's roles in art history, both as the creators and subjects of art; concentration on western survey prehistory to the 21st century with comparisons to non-western representations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or WST-1510 Introduction to Women's Studies.

WST-2050 Introduction to Personal and Reflective Writing

03 Semester Credits

[This course is cross-listed as ENG-2050. Credit can only be earned once for either course.] The examination of personal, narrative, and self reflective writing from journals, memoirs, letters, essays, poetry, blogs, autobiographies, biographies, and other non-fiction works, through discussion, and various formal and informal writing assignments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.

WST-2120 Women and Politics

03 Semester Credits

[This course is cross-listed as POL-2120. Credit can only be earned once for either course.] This course examines women's political life in the United States. Women's involvement in all aspects of the political process will be addressed. Substantive areas include women and democracy, their political participation, and their role in governing institutions. The course also includes discussion on the struggle for equal rights and issues of public policy.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): POL-1010 American National Government, or HIST-1020 History of Civilization II, or HIST-1520 United States History Since 1877.

WST-2850 Practicum in Women's Studies

03 Semester Credits

Practicum includes weekly seminar plus placement in non-profit or profit organization supportive of women and family interests, mentorship relationship with a leader in business, government and social service, or employment in an approved facility. Note: Course may not transfer.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): WST-1510 Introduction to Women's Studies.



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APPENDIX I Transfer Module

The Ohio Board of Regents Transfer and Articulation Policy established a transfer module for Ohio's public colleges and universities. The Transfer Module represents a subset or the entire set of a college or university's general education requirements for an Associate of Arts (AA), Associate of Science (AS) and Baccalaureate degrees at many institutions. Transfer students with an earned AA or AS degree which contains an identifiable Transfer Module will have met the Transfer Module requirements of the receiving institution. A Transfer Module requires a student to complete 36-40 semester credit hours in the following subject areas: English Composition, Mathematics, Arts and Humanities, Social and Behavioral Sciences, and Natural and Physical Sciences. Courses to meet the required number of credit hours should be selected from the list below of approved transfer module courses. More information and the complete transfer module policy can be found at:
http://regents.ohio.gov/transfer/policy/transfer_policy_d2aa.php

Note: Students should meet with a counselor to assure that courses selected are most appropriate for the major and the transfer college or university selected, and that the courses are consistent with the minimum graduation requirements of Cuyahoga Community College.

Ohio Articulation Number (OAN)

Ohio Articulation Numbers are identifiers used to represent a specific set of learning outcomes for a Transfer Module or Transfer Assurance Guide (TAG) course. The OAN is used to identify the equivalency of courses between two institutions. Courses with OAN approval have been reviewed by statewide faculty committees. Students are assured of their equivalency at any Ohio higher education public institution that has OAN approval during the same time period.

Courses within the Transfer Module may also be part of an approved Transfer Assurance Guide (TAG). OAN are listed below for courses that are also part of an approved TAG. A complete list of approved courses for all public institutions can be found at:
<https://transfer-oatn.ohiohighered.org/ap:23>

English Composition: minimum of three semester hours with an emphasis on written composition

ENG-1010	College Composition I <i>OAN Approved: TME001</i>	3 Cr.
ENG-101H	Honors College Composition I <i>OAN Approved: TME001</i>	3 Cr.
ENG-1020	College Composition II <i>OAN Approved: TME002</i>	3 Cr.
ENG-102H	Honors College Composition II <i>OAN Approved: TME002</i>	3 Cr.

Mathematics: minimum of three semester hours

MATH-1380	Mathematics for Elementary and Middle School Teachers II	4 Cr.
MATH-1410	Elementary Probability and Statistics I <i>OAN Approved: TMM010</i>	3 Cr.
MATH-1420	Elementary Probability and Statistics II	3 Cr.
MATH-1470	Modern Mathematics for Business/Social Sciences I	4 Cr.
MATH-1480	Modern Mathematics for Business/Social Sciences II <i>OAN Approved: TMM013</i>	4 Cr.
MATH-1510	Trigonometry <i>OAN Approved: TMM003</i>	3 Cr.
MATH-1521	College Algebra <i>OAN Approved: TMM001</i>	4 Cr.

Mathematics (Continued)

MATH-152H	Honors College Algebra <i>OAN Approved: TMM001</i>	4 Cr.
MATH-1580	Pre-Calculus	5 Cr.
MATH-1610	Calculus I <i>OAN Approved: TMM005</i>	5 Cr.
MATH-161H	Honors Calculus I <i>OAN Approved: TMM005</i>	5 Cr.
MATH-1620	Calculus II <i>OAN Approved: TMM006</i>	5 Cr.
MATH-162H	Honors Calculus II <i>OAN Approved: TMM006</i>	5 Cr.
MATH-2010	Introduction to Discrete Mathematics	4 Cr.
MATH-2310	Calculus III <i>OAN Approved: TMM018 & OMT 018</i>	4 Cr.
MATH-231H	Honors Calculus III <i>OAN Approved: TMM018 & OMT 018</i>	4 Cr.
MATH-2410	Linear Algebra <i>OAN Approved: OMT019</i>	3 Cr.
MATH-2520	Differential Equations <i>OAN Approved: TMM020 & OMT 020</i>	3 Cr.

Arts and Humanities: minimum of six semester hours; select from at least two areas

ART-1010	Art Appreciation	3 Cr.
ART-2020 (formerly ART-1020)	Art History Survey: Prehistoric to Renaissance <i>OAN Approved: OAH005(course 1 of 2, both must be taken)</i>	3 Cr.
ART-2030 (formerly ART-1030)	Art History Survey: Late Renaissance to Present <i>OAN Approved: OAH005(course 2 of 2, both must be taken)</i>	3 Cr.
ART-1040	Survey of Non-Western Art	3 Cr.

DANC-1100	Dance Appreciation	3 Cr.
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ENG-2310	American Literature I <i>OAN Approved: OAH 053</i>	3 Cr.
ENG-2320	American Literature II <i>OAN Approved: OAH 054</i>	3 Cr.
ENG-2350	British Literature I <i>OAN Approved: OAH 055</i>	3 Cr.
ENG-2360	British Literature II <i>OAN Approved: OAH 056</i>	3 Cr.
ENG-2410	Introduction to Literature: Poetry	3 Cr.
ENG-2420	Introduction to Literature: Fiction	3 Cr.
ENG-2430	Introduction to Literature: Drama	3 Cr.
ENG-2510	African-American Literature I	3 Cr.
ENG-2520	African-American Literature II	3 Cr.
ENG-2601 (formerly ENG-2600)	Literature for Children and Adolescents	3 Cr.
ENG-2700	World Literature	3 Cr.
ENG-2710	Shakespeare	3 Cr.
ENG-2720	Survey of Biblical Literature	3 Cr.

Appendix I: Transfer Module

Arts and Humanities (Continued)

ENG-2730	Exploration of World Mythology	3 Cr.
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HUM-1010	Introduction to Humanities	3 Cr.
HUM-1020	The Individual in Society	3 Cr.
HUM-1030	The Individual in the Cosmos	3 Cr.

JMC-1310	Film Appreciation	3 Cr.
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MUS-1010	Survey of European Classical Music	3 Cr.
MUS-1020	Survey of Jazz	3 Cr.
MUS-1030	Survey of Rock and Roll	3 Cr.
MUS-1040	Survey of African-American Music	3 Cr.
MUS-1050	Survey of World Music	3 Cr.
MUS-2500	Music History and Literature I	3 Cr.
MUS-2510	Music History and Literature II	3 Cr.
MUS-2520	Jazz History I	2 Cr.
MUS-2530	Jazz History II	2 Cr.

PHIL-1000	Critical Thinking	3 Cr.
PHIL-1010	Introduction to Philosophy <i>OAN Approved: OAH045</i>	3 Cr.
PHIL-101H	Honors Introduction to Philosophy	3 Cr.
PHIL-1020	Introduction to Logic	3 Cr.
PHIL-2010	Comparative World Religions	3 Cr.
PHIL-2020	Ethics <i>OAN Approved: OAH046</i>	3 Cr.
PHIL-202H	Honors Ethics	3 Cr.
PHIL-2031 (formerly PHIL-2030)	Philosophy of Science	3 Cr.
PHIL-2040	Philosophy of Art	3 Cr.
PHIL-2050	Bioethics	3 Cr.
PHIL-205H	Honors Bioethics	3 Cr.

REL-1010	Introduction to Religious Studies	3 Cr.
REL-2010	Religious Traditions of Western Christianity	3 Cr.
REL-2020	Religious Traditions of Judaism	3 Cr.
REL-2030	Religious Traditions of Islam	3 Cr.
REL-2040	Religious Traditions of India	3 Cr.
REL-2050	Religious Traditions of China and Japan	3 Cr.
REL-2060	African-American Religious Experience	3 Cr.

THEA-1010	Theatre Appreciation	3 Cr.
THEA-1100	Survey and Appreciation of American Musical Theatre	3 Cr.
THEA-2210 (formerly THEA-1210)	History of Theatre and Drama I	3 Cr.
THEA-2220 (formerly THEA-1220)	History of Theatre and Drama II	3 Cr.

Social and Behavioral Sciences: minimum of six semester hours; select from at least two areas

ANTH-1010	Cultural Anthropology <i>OAN Approved: OSS001</i>	3 Cr.
ANTH-1020	Physical Anthropology <i>OAN Approved: OSS002</i>	3 Cr.
ANTH-1030	Archaeology <i>OAN Approved: OSS003</i>	3 Cr.
ANTH-2010	Peoples and Cultures of the World	3 Cr.

ECON-1210	Survey of Economics	3 Cr.
ECON-1220	Economic Development of the American Economy	3 Cr.
ECON-2610 (formerly ECON-1610)	Principles of Macroeconomics <i>OAN Approved: OSS 005</i>	4 Cr.
ECON-2620 (formerly ECON-1620)	Principles of Microeconomics <i>OAN Approved: OSS 004</i>	4 Cr.

GEOG-1010	World Regional Geography <i>OAN Approved: OSS 008</i>	3 Cr.
GEOG-1030	Environmental Geography	3 Cr.
GEOG-1050	Africans in the Americas	3 Cr.
GEOG-1510	Regional Geography of the United States and Canada	3 Cr.

*Transfer Office is working to have History courses approved for Arts & Humanities area		
HIST-1010	History of Civilization I <i>OAN Approved: OHS 041</i>	3 Cr.
HIST-101H	Honors History of Civilization I	3 Cr.
HIST-1020	History of Civilization II <i>OAN Approved: OHS 042</i>	3 Cr.
HIST-102H	Honors History of Civilization II	3 Cr.
HIST-1510	United States History to 1877 <i>OAN Approved: OHS 043</i>	3 Cr.
HIST-151H	Honors United States History to 1877	3 Cr.
HIST-1520	United States History Since 1877 <i>OAN Approved: OHS 044</i>	3 Cr.
HIST-152H	Honors United States History Since 1877	3 Cr.
HIST-1610	American Studies	3 Cr.
HIST-1630	History of Immigration in America	3 Cr.
HIST-1700	History of Africa	3 Cr.
HIST-2030	Islamic History	3 Cr.
HIST-2051 (formerly HIST-2050)	History of Russia to 1917	3 Cr.
HIST-2060	Modern Russian History and Politics	3 Cr.
HIST-2070	African-American Women in History	3 Cr.
HIST-2150 (formerly HIST-1710)	African History to 1877	3 Cr.
HIST-2160 (formerly HIST-1720)	African History 1877- Present	3 Cr.
HIST-2660	Women in American History	3 Cr.

Social and Behavioral Sciences (Continued)

POL-1010	American National Government <i>OAN Approved: OSS 011</i>	3 Cr.
POL-101H	Honors American National Government <i>OAN Approved: OSS 011</i>	3 Cr.
POL-1020	State and Local Government <i>OAN Approved: OSS 014</i>	3 Cr.
POL-2030 (formerly POL-1030)	Comparative Government	3 Cr.
POL-2060	Political Systems of Africa	3 Cr.
POL-2070 (formerly POL-1070)	International Relations <i>OAN Approved: OSS 012</i>	3 Cr.
POL-2100 (formerly POL-1100)	Constitutional Law	3 Cr.

PSY-1010	General Psychology <i>OAN Approved: OSS015</i>	3 Cr.
PSY-101H	Honors General Psychology	3 Cr.
PSY-1050	Introduction to Industrial/Organizational Psychology	3 Cr.
PSY-2010	Child Growth and Development <i>OAN Approved: OSS 045</i>	3 Cr.
PSY-2020	Life Span Development <i>OAN Approved: OSS 048</i>	4 Cr.
PSY-2040	Social Psychology <i>OAN Approved: OSS016</i>	3 Cr.
PSY-2050	Psychology of Personality <i>OAN Approved: OSS 018</i>	3 Cr.
PSY-2060	Adolescent Psychology <i>OAN Approved: OSS 046</i>	3 Cr.
PSY-2080	Abnormal Psychology <i>OAN Approved: OSS 017</i>	3 Cr.
PSY-2100	Introduction to Aging <i>OAN Approved: OSS047</i>	3 Cr.
PSY-2110 (formerly PSY-2030)	Educational Psychology <i>OAN Approved: OED 003</i>	3 Cr.

SOC-1010	Introductory Sociology <i>OAN Approved: OSS 021</i>	3 Cr.
SOC-1020	Social Institutions	3 Cr.
SOC-2020 (formerly SOC-1210)	Sociology of the Family <i>OAN Approved: OSS023</i>	3 Cr.
SOC-2010	Social Problems <i>OAN Approved: OSS025</i>	3 Cr.
SOC-201H	Honors Social Problems	3 Cr.
SOC-2100	Aging and Society	3 Cr.
SOC-2110	Death and Dying	3 Cr.
SOC-2310	Contemporary American Black-White Relations	3 Cr.
SOC-2510	Urban Sociology	3 Cr.
SOC-2550	Race and Ethnic Relations <i>OAN Approved: OSS024</i>	3 Cr.

Social and Behavioral Sciences (Continued)

UST-1010	Introduction to Urban Studies	3 Cr.
UST-1020	Urban Geography	3 Cr.
UST-2020	Urban Cultures	3 Cr.
UST-2070	Urban Politics	3 Cr.
UST-2640	American Urban History	3 Cr.
WST-1510	Introduction to Women's Studies	3 Cr.
WST-2010	Women in the World	3 Cr.

Natural and Physical Sciences: minimum of six semester hours; one of the courses must be a lab course

BIO-1040	The Cell and DNA	3 Cr.
BIO-104L	The Cell and DNA Laboratory	1 Cr.
BIO-1050	Human Biology	3 Cr.
BIO-105L	Human Biology Laboratory	1 Cr.
BIO-1060	Environment, Ecology, and Evolution	3 Cr.
BIO-106L	Environment, Ecology, and Evolution Laboratory	1 Cr.
BIO-1100	Introduction to Biological Chemistry	3 Cr.
BIO-1410	Anatomy and Physiology of Domestic Animals I	4 Cr.
BIO-1420	Anatomy and Physiology of Domestic Animals II	4 Cr.
BIO-1500	Principles of Biology I <i>OAN Approved: OSC003</i>	4 Cr.
BIO-150H	Honors Principles of Biology I <i>OAN Approved: OSC003</i>	4 Cr.
BIO-1510	Principles of Biology II <i>OAN Approval: OSC004</i>	4 Cr.
BIO-2060	Principles of Genetics	3 Cr.
BIO-2150	Environmental Science	3 Cr.
BIO-2330 (formerly BIO-1430)	Anatomy and Physiology I	4 Cr.
BIO-2340 (formerly BIO-1440)	Anatomy and Physiology II	4 Cr.
BIO-2500	Microbiology	4 Cr.

CHEM-1010	Introduction to Inorganic Chemistry	4 Cr.
CHEM-101H	Honors Introduction to Inorganic Chemistry	4 Cr.
CHEM-1020	Introduction to Organic Chemistry and Biochemistry	4 Cr.
CHEM-1300	General Chemistry I <i>OAN approved OSC008 (Course 1 of 2)</i>	4 Cr.
CHEM-130H	Honors General Chemistry	5 Cr.
CHEM-130L	General Chemistry Laboratory I <i>OAN approved OSC008 (Course 2 of 2)</i>	1 Cr.
CHEM-1310	General Chemistry II <i>OAN Approved: OSC009 (Course 1 of 2)</i>	4 Cr.
CHEM-131L	General Chemistry Laboratory II <i>OAN Approved: OSC009 (Course 2 of 2)</i>	1 Cr.

Appendix I: Transfer Module**Natural and Physical Sciences (continued)**

ESCI-1310	Physical Geography <i>OAN Approved: OSS 006(Course 1 of 2)</i>	3 Cr.
ESCI-131L	Laboratory in Physical Geography <i>OAN Approved: OSS 006(Course 2 of 2)</i>	1 Cr.
ESCI-1410	Physical Geology <i>OAN Approved : OSC011 (Course 1 of 2)</i>	3 Cr.
ESCI-141H	Honors Physical Geology	3 Cr.
ESCI-141L	Laboratory in Physical Geology <i>OAN Approved: OSC011 (Course 2 of 2)</i>	1 Cr.
ESCI-1510	Historical Geology <i>OAN Approved: OSC012 (Course 1 of 2)</i>	3 Cr.
ESCI-151L	Laboratory in Historical Geology <i>OAN Approved: OSC012 (Course 2 of 2)</i>	1 Cr.
ESCI-1610	Geology of the National Parks	3 Cr.
ESCI-161L	Laboratory in Geology of the National Parks	1 Cr.
ESCI-2300	Introduction to the Science of Ecosystems	3 Cr.

PHYS-1050	Everyday Physics	2 Cr.
PHYS-1210	College Physics I <i>OAN Approved: OSC014</i>	4 Cr.
PHYS-1220	College Physics II <i>OAN Approved: OSC015</i>	4 Cr.
PHYS-2310	General Physics I <i>OAN Approved: OSC016</i>	5 Cr.
PHYS-2320	General Physics II <i>OAN Approved: OSC017</i>	5 Cr.
PHYS-2400	Modern Physics	3 Cr.

PSCI-1010	Astronomy	3 Cr.
PSCI-101L	Astronomy Laboratory	1 Cr.
PSCI-1020	Chemistry	3 Cr.
PSCI-102L	Chemistry Laboratory	1 Cr.
PSCI-1030	Earth	3 Cr.
PSCI-103L	Earth Laboratory	1 Cr.

Oral Communication

SPCH-1010	Fundamentals of Speech <i>OAN Approved : OCM 004</i>	3 Cr.
SPCH-101H	Honors Fundamentals of Speech <i>OAN Approved : OCM 004</i>	3 Cr.

APPENDIX II

Transfer Assurance Guides

Ohio Transfer Initiatives

The State of Ohio through the leadership of the Ohio Board of Regents has established a coherent statewide policy intended to facilitate a student's ability to complete their highest level of educational goal achievement seamlessly within Ohio's postsecondary educational system. To that end, the Ohio Articulation and Transfer policy:

<http://www.regents.ohio.gov/transfer/policy/index.php> was developed to facilitate the transfer of students and credits from any state-assisted college or university to another. It encourages faculty recognition of comparable and compatible learning experiences and expectations across institutions. It also encourages students to complete "units" of educational experience as they progress [e.g. transfer assurance guides, transfer modules, associate and baccalaureate degrees].

Transfer Assurance Guides

Statewide Transfer Assurance Guides (TAGs) are composed of General Education Courses (Transfer Module courses) and specified courses required for the academic major. A TAG as an advising tool can assist Ohio college and college bound students planning specific majors to make course selections that will ensure comparable, compatible, and equivalent learning experiences across the state's higher-education system. TAGs apply across, at least, all public higher education institutions in Ohio and embody commonly accepted pathways to majors within the Bachelor's degree. TAG

approved courses are assigned an Ohio Articulated Number (OAN) and are accepted and applied to the major at all Ohio public colleges and universities. Major specific TAG pathways in the arts, humanities, business, communication, education, health, mathematics, science, engineering, engineering technologies, and the social sciences have been developed by faculty teams.

Additional information on specific Transfer Assurance Guides can be found on the Ohio Board of Regents Web site: <http://www.ohiohighered.org/transfer/tag>

TAGs enable students to make informed course selection decisions and plans for their future transfer. Advisors at the institution to which a student wishes to transfer should also be consulted during the transfer process. Because of specific major requirements, early identification of the intended major is encouraged.

Ohio Articulation Number (OAN)

Pre-major courses that represent the commonly accepted pathway to majors within the Bachelor's degree (TAGs) have been reviewed by statewide faculty committees. Courses or course sequences meeting established Learning Outcome standards are assigned a discipline specific Ohio Articulation Number (OAN). When consensus is established and a course is noted with both the colleges or universities departmental designation and the assigned Ohio Articulation Number (OAN), students are assured not only of the equivalency of the courses, but of their application to the degree objective. A complete listing of Cuyahoga Community Colleges OAN approved courses can be found at: <https://transfer-oatn.ohiohighered.org/ap:20>

ARTS AND HUMANITIES

Art History TAG			
ART-2020	Art History: Prehistoric to Renaissance (1 of 2 courses, both must be taken)	3 Cr.	OAH005
ART-2030	Art History: Late Renaissance in Present (2 of 2 courses, both must be taken)	3 Cr.	OAH005
VCPH-1050	Black and White Photography I	3 Cr.	OAH006
ART-1100	Select 6 hrs. of Fine Arts Electives: Sculpture I	3 Cr.	OAH047
ART-2050	or Painting I	3 Cr.	OAH048
VCPH-1050	or Black and White Photography I	3 Cr.	OAH006
ART 2210	or Printmaking I	3 Cr.	OAH0049
ART 1700	or Ceramics I	3 Cr.	OAH 050
	or		

Appendix II: Transfer Assurance Guides

ART 2000	Life Drawing I	3 Cr.	OAH 051
Dance TAG			
DANC-1510	Dance II	3 Cr.	OAH013
English TAG			
ENG-2310	American Literature I	3 Cr.	OAH053
ENG-2320	American Literature II	3 Cr.	OAH054
ENG-2350	British Literature I	3 Cr.	OAH055
ENG-2360	British Literature II	3 Cr.	OAH056
Studio/Fine Arts TAG			
ART-1050	Drawing I	3 Cr.	OAH001
ART-1070	3D Foundations	3 Cr.	OAH004
ART-1080	Visual Design I	3 Cr.	OAH003
ART-1100	Select 3-6 hrs. of Fine Arts Electives: Sculpture I	3 Cr.	OAH047
ART-2050	or Painting I	3 Cr.	OAH048
ART-2210	or Printmaking I	3 Cr.	OAH0049
ART-1700	or Ceramics I	3 Cr.	OAH 050
ART-2000	or Life Drawing I	3 Cr.	OAH 051
VCPH-1050	or Black and White Photography I	3 Cr.	OAH006
VCPH-1261	or Photography I	3 Cr.	OAH 002
Music TAG			
MUS-1250	Class Keyboard I (1 of 2 courses, both must be taken)	2 Cr.	OAH019
MUS-1260	Class Keyboard II (2 of 2 courses, both must be taken)	2 Cr.	OAH019
MUS-1460	Applied Music I (1 of 4 courses, any 1 of the 4 courses may be taken)	2 Cr.	OAH020
MUS-1470	Applied Music II (2 of 4 courses, any 1 of the 4 courses may be taken)	2 Cr.	OAH020
MUS-2460	Applied Music III (3 of 4 courses, any 1 of the 4 courses may be taken)	2 Cr.	OAH020
MUS-2470	Applied Music IV (4 of 4 courses, any 1 of the 4 courses may be taken)	2 Cr.	OAH020
MUS-1500	Choir (1 of 4 courses, any 1 of the 4 courses may be taken)	1 Cr.	OAH022

MUS-1510	Choral Ensemble (2 of 4 courses, any 1 of the 4 courses may be taken)	1 Cr.	OAH022
MUS-1530	Concert Band (3 of 4 courses, any 1 of the 4 courses may be taken)	1 Cr.	OAH022
MUS-1550	Instrumental Ensemble (4 of 4 courses, either may be taken)	1 Cr.	OAH022
MUS-1600	Traditional Theory I (1 of 8 courses, all must be taken)	3 Cr.	OAH052
MUS-1610	Ear Training I (2 of 8 courses, all must be taken)	2 Cr.	OAH052
MUS-1620	Traditional Theory II (3 of 8 courses, all must be taken)	3 Cr.	OAH052
MUS-1630	Ear Training II (4 of 8 courses, all must be taken)	2 Cr.	OAH052
MUS-2600	Traditional Theory III (5 of 8 courses, all must be taken)	3 Cr.	OAH052
MUS-2610	Ear Training III (6 of 8 courses, all must be taken)	2 Cr.	OAH052
MUS-2620	Traditional Theory IV (7 of 8 courses, all must be taken)	3 Cr.	OAH052
MUS-2630	Ear Training IV (8 of 8 courses, all must be taken)	2 Cr.	OAH052
Philosophy TAG			
PHIL-1010	Introduction to Philosophy	3 Cr.	OAH045
PHIL-2020	Ethics	3 Cr.	OAH046
Theatre TAG			
THEA-1500	Acting I	3 Cr.	OAH027
THEA-1550	Practicum in Technical Theatre	2 Cr.	OAH026
THEA-1540	Rehearsal and Performance	2 Cr.	OAH025
THEA-2010	Script Analysis	3 Cr.	OAH024
THEA-1430	Introduction to Scenery & Stagecrafts	3 Cr.	OAH028

BUSINESS

Business TAG			
ACCT-1310	Financial Accounting	4 Cr.	OBU001
ACCT-1340	Managerial Accounting	4 Cr.	OBU002
BADM-2010	Business Communications	3 Cr.	OBU005
BADM-2150	Business Law	4 Cr.	OBU004
ECON-2610	Principles of Macroeconomics	4 Cr.	OSS005
ECON-2620	Principles of Microeconomics	4 Cr.	OSS004
MARK-2010	Principles of Marketing	3 Cr.	OBU006
MATH-1610	Calculus I	5 Cr.	OMT005
MATH-1490	Business Probability and Statistics I (1 of 2 courses, both must be taken)	3 Cr.	OBU009
MATH-1500	Business Probability and Statistics II (2 of 2 courses, both must be taken)	3 Cr.	OBU009

Appendix II: Transfer Assurance Guides

COMMUNICATION

Communication Studies TAG			
SPCH-1000	Fundamentals of Interpersonal Communication	3 Cr.	OCM002
SPCH-1010	Fundamentals of Speech Communication	3 Cr.	OCM004
SPCH-1210	Group Discussion	3 Cr.	OCM003
Journalism TAG			
JMC-1011	Introduction to Mass Communication	4 Cr.	OCM006
VCPH-2760	Editorial Photography	3 Cr.	OCM011
Public Relations/Advertising TAG			
JMC-1011	Introduction to Mass Communication	4 Cr.	OCM006
MARK-2270	Principles of Advertising	3 Cr.	OCM012
VCPH-2760	Editorial Photography	3 Cr.	OCM011
Telecommunication TAG			
JMC-1011	Introduction to Mass Communication	4 Cr.	OCM006
JMC-2420	Advanced Television Production	3 Cr.	OCM010
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3 Cr.	OCM008

EDUCATION

Early Childhood Education TAG			
ECED-1010	Introduction to Early Childhood Education	4 Cr.	OED005
ECED-2401	Families, Communities & Schools	3 Cr.	OED006
EDUC-1011	Introduction to Education	3 Cr.	OED001
EDUC-1020	Educational Technology	3 Cr.	OED002
EDUC-1411	Individuals with Exceptionalities	3 Cr.	OED004
PSY-2110	Educational Psychology	3 Cr.	OED003
Education TAG			
EDUC-1011	Introduction to Education	3 Cr.	OED001
EDUC-1020	Educational Technology	3 Cr.	OED002
EDUC-1411	Individuals with Exceptionalities	3 Cr.	OED004
PSY-2110	Educational Psychology	3 Cr.	OED003

ENGINEERING & ENGINEERING TECHNOLOGY

Aerospace, Agriculture, Civil, Mechanical, Engineering TAG			
MATH-2520	Differential Equations	3 Cr.	TMM020 & OMT020
MET-1100	Technology Orientation	2 Cr.	OES001
Bioengineering, Biomedical Engineering TAG			
CHEM-1300 & CHEM-130L	General Chemistry I General Chemistry Laboratory I	4 Cr. 1 Cr.	OSC008
CHEM-130H	Or Honors General Chemistry I	5 Cr.	
CHEM-1310 & CHEM-131L	General Chemistry II General Chemistry Laboratory II	4 Cr. 1 Cr.	OSC009
CHEM-131H	Or Honors General Chemistry II	5 Cr.	
MET-1100	Technology Orientation	2 Cr.	OES001

Chemical, Environmental Engineering TAG			
MATH-2520	Differential Equations	3 Cr.	TMM020 & OMT020
MET-1100	Technology Orientation	2 Cr.	OES001
Civil, Construction Engineering Technology TAG			
CNST-2110	Basic Survey Practices	3 Cr.	OET015
CNST-2130	Construction Methods, Materials & Equipment	3 Cr.	OET016
Computer, Electrical Engineering TAG			
MATH-2310	Calculus III	4 Cr.	TMM018 & OMT018
MET-1100	Technology Orientation	2 Cr.	OES001
Electrical Engineering Technology TAG			
EET-1160 & EET-1170	Direct Current Circuits I	2 Cr.	OET001
	Direct Current Circuits I	2 Cr.	
EET-1210	AC Electric Circuits	3 Cr.	OET003
PHYS-1210	College Physics I	4 Cr.	OSC014
Industrial Engineering TAG			
MET-1100	Technology Orientation	2 Cr.	OES001
MET-2421	Fundamental of Economic Engineering	2 Cr.	OES005
Mechanical Engineering Technology TAG			
MET-1240	Machine Tools and Manufacturing Processes	3 Cr.	OET010
MET-1300	Engineering Materials and Metallurgy	3 Cr.	OET013
MET-1601	Technical Statics	3 Cr.	OET007
MET-2041	CAD II & GD &T	3 Cr.	OET012
MET-2200	Strength of Materials	3 Cr.	OET008
MET-2300	Fluid Power	3 Cr.	OET009

HEALTH

Dietetics TAG			
DIET-1200	Basic Nutrition	3 Cr.	OHL016
Health Information Management TAG			
BIO-2600	Pathophysiology	3 Cr.	OHL019
HIM-1311	Legal Aspects of Health Care	3 Cr.	OHL021
HIM-2430	Medical Reimbursement Methodologies	2 Cr.	OHL022
IT-1010	Introduction to Microcomputer Applications	3 Cr.	OBU003
MA-1020	Medical Terminology I	2 Cr.	OHL020
Medical Laboratory TAG			
MLT-1000	Introduction to Medical Laboratory	3 Cr.	OHL008
MLT-1491	Urinalysis and Body Fluids	3 Cr.	OHL010
MLT-2461	Hematology	3 Cr.	OHL009

Appendix II: Transfer Assurance Guides

MATHEMATICS AND STATISTICS

Mathematics TAG			
MATH-2310	Calculus III	4 Cr.	TMM018 & OMT018
MATH-2410	Introduction to Linear Algebra	3 Cr.	OMT019
MATH-2520	Differential Equations	3 Cr.	TMM020 & OMT020
PHYS-2310	General Physics I	5 Cr.	OSC016
PHYS-2320	General Physics II	5 Cr.	OSC017

NATURAL/PHYSICAL SCIENCES

Biology TAG			
BIO-1500/ BIO-150H	Principles of Biology I	4 Cr.	OSC003
BIO-1510	Principles of Biology II	4 Cr.	OSC004
CHEM-2300	Organic Chemistry I (1 of 2 courses, both must be taken)	5 Cr.	OSC010
CHEM-2310	Organic Chemistry II (2 of 2 courses, both must be taken)	5 Cr.	OSC010
PHYS-1210	College Physics I	4 Cr.	OSC014
PHYS-2310	General Physics I	5 Cr.	OSC016
Chemistry TAG			
For BS Majors:			
CHEM-2300	Organic Chemistry I (1 of 2 courses, both must be taken)	5 Cr.	OSC010
CHEM-2310	Organic Chemistry II (2 of 2 courses, both must be taken)	5 Cr.	OSC010
PHYS-2310	General Physics I	5 Cr.	OSC016
PHYS-2320	General Physics II	5 Cr.	OSC017
For BA Majors:			
CHEM-2300	Organic Chemistry I (1 of 2 courses, both must be taken)	5 Cr.	OSC010
CHEM-2310	Organic Chemistry II (2 of 2 courses, both must be taken)	5 Cr.	OSC010
PHYS-1210	College Physics I	4 Cr.	OSC014
PHYS-1220	College Physics II	4 Cr.	OSC015
PHYS-2310	General Physics I	5 Cr.	OSC016
PHYS-2320	General Physics II	5 Cr.	OSC017
Geology TAG			
ESCI-1410 & ESCI-141L	Physical Geology (1 of 2 courses, both must be taken) Laboratory in Physical Geology (2 of 2 courses, both must be taken)	3 Cr. 1 Cr.	OSC011
ESCI-1510 & ESCI-151L	Historical Geology (1 of 2 courses, both must be taken) Laboratory in Historical Geology (2 of 2 courses, both must be taken)	3 Cr. 1 Cr.	OSC012

Physics TAG			
MATH-2310	Calculus III	4 Cr.	TMM018 & OMT018
MATH-2410	Introduction to Linear Algebra	3 Cr.	TMM019 & OMT019
MATH-2520	Differential Equations	3 Cr.	TMM020 & OMT020

SOCIAL SCIENCES

Anthropology TAG			
ANTH-1010	Cultural Anthropology	3 Cr.	OSS001
ANTH-1210	Human Evolution	4 Cr.	OSS002
ANTH-1030	Archeology	3 Cr.	OSS003
Criminal Justice TAG			
CJ-1000	Introduction to Criminal Justice	3 Cr.	OSS031
CJ-1070	Introduction to Corrections	2 Cr.	OSS033
Economics TAG			
ECON-2610	Principles of Macroeconomics	4 Cr.	OSS005
ECON-2620	Principles of Microeconomics	4 Cr.	OSS004
Geography TAG			
ESCI-1310	Physical Geography	3 Cr.	OSS006
GEOG-1000	Introduction to Geography	3 Cr.	OSS007
GEOG-1010	World Regional Geography	3 Cr.	OSS008
History TAG			
HIST-1010/ HIST-101H	History of Civilization I	3 Cr.	OHS041
HIST-1020/ HIST-102H	History of Civilization II	3 Cr.	OHS042
HIST-1510/ HIST-151H	United States History to 1877	3 Cr.	OHS043
HIST-1520/ HIST-152H	United States History since 1877	3 Cr.	OHS044
Political Science TAG			
POL-1010/ POL-101H	American National Government	3 Cr.	OSS011
POL-1020	State and Local Government	3 Cr.	OSS014
POL-2030	Comparative Politics	3 Cr.	OSS013
POL-2070	International Relations	3 Cr.	OSS012
Psychology TAG			
PSY-1010/ PSY-101H	General Psychology Honors General Psychology	3 Cr.	OSS015
PSY-2040	Social Psychology	3 Cr.	OSS016
PSY-2050	Psychology of Personality	3 Cr.	OSS018
PSY-2080	Abnormal Psychology	3 Cr.	OSS017
PSY-2010/ PSY-201H	Child Growth and Development	3 Cr.	OSS045
PSY-2020/ PSY-202H	Life Span Development	3 Cr.	OSS048
PSY-2060	Adolescent Psychology	3 Cr.	OSS046
PSY-2100	Introduction to Aging	3 Cr.	OSS047

Appendix II: Transfer Assurance Guides

Sociology TAG			
SOC-2010	Social Problems	3 Cr.	OSS025
SOC-2020	Sociology of the Family	3 Cr.	OSS023
SOC-2550	Race and Ethnic Relations	3 Cr.	OSS024
Social Work TAG			
SOC-1010	Introductory Sociology	3 Cr.	OSS021
SOC-2051	Introduction to Social Welfare	3 Cr.	OSS030
PSY-1010	General Psychology	3 Cr.	OSS015

APPENDIX III

Career Technical Assurance Guides

Career Technical Credit Transfer

Career Technical Credit Transfer (CT²) is a collaborative effort among the Ohio Board of Regents, the Ohio Department of Education's Office of Career-Technical & Adult Education, public secondary/adult career-technical education institutions and state supported institution of higher education. The career technical credit transfer initiative further expands the state of Ohio's articulation and transfer efforts. It ensures that students at an adult career-technical institution or secondary career-technical education institution can transfer successfully completed technical courses that adhere to recognized industry standards to any state institution of higher education without unnecessary duplication or institutional barriers. It enables students to attain their highest educational aspirations in the most efficient and effective manner as a result of clear and consistent standards. Additional information can be found on the Ohio Board of Regents web site: <http://ohiohighered.org/transfer/ct2>

Career Technical Assurance Guides

Career Technical Assurance Guides (CTAG) serve as advising tools, identifying the course or program which is part of the statewide guarantee. CTAG also describe additional conditions or obligations (e.g. program accreditation or industry credential) associated with the guarantee. The ultimate goal of Career Technical Credit Transfer is to receive technical course credit at a public institution of higher education.

Career-Technical Articulation Number (CTAN)

A CTAN consists of learning outcomes representing knowledge and skills in a technical area needed to transition from career-technical education to public institutions of higher education. Learning outcomes are based on recognized industry standards established by faculty panels. Each CTAN in the technical area is assigned an identifying number. A complete listing of Cuyahoga Community College's approved courses can be found at:

<http://transfer-oatn.ohiohighered.org/ap:9>

Automotive Technology			
CTAUT001 Brakes <i>Student Requirement: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years)</i> <i>Career-technical secondary or adult faculty sign-off of student safety and laboratory learning</i>	AUTO-1450	Automotive Braking	3 Cr.
CTAUT002 Electrical <i>Student Requirement: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years)</i> <i>Career-technical secondary or adult faculty sign-off of student safety and laboratory learning</i>	AUTO-1501	Automotive Electrical Fundamentals	2 Cr.
CTAUT003 Engine <i>Student Requirement: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years)</i> <i>Career-technical secondary or adult faculty sign-off of student safety and laboratory learning</i>	AUTO-2400	Engine Performance	3 Cr.
CTAUT004 Suspension/Steering <i>Student Requirement: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years)</i> <i>Career-technical secondary or adult faculty sign-off of student safety and laboratory learning</i>	AUTO-1400	Automotive Alignment Steering & Suspension	3 Cr.

Appendix III: Career Technical Assurance Guides

Culinary and Food Service Management			
CTCF001 Sanitation and Safety <i>Student Requirement: National Restaurant SeroSafe Certificate</i>	HOSP-1020	Sanitation and Safety	2 Cr.
CTCF002 Intro to Hospitality & Tourism <i>Student Requirement: Current ORA ProStart Certificate</i>	HOSP-1010	Introduction to the Hospitality Industry	2 Cr.
CTCF003 Food Production Laboratory <i>Student Requirement: National Restaurant SeroSafe Certificate and Current ORA ProStart Certificate or American Culinary Federation Culinarian certificate</i>	HOSP-1031	Basic Food Preparation	3 Cr.
CTCF004 Cooperative Work Experience <i>Student Requirement: Current ORA ProStart Certificate</i>	HOSP-1950	Restaurant/Food Service Management field Experience	1 Cr.
Education			
CTED001 <i>Student Requirement: Proof of completion of secondary Tech Prep teaching profession pathway program and an 85 on Tech Prep teaching portfolio</i>	EDUC-1011	Introduction to Education	3 Cr.
Electrical Engineering Technology <i>Student Requirement: Proof of satisfactory course completion</i>			
CTEET001 DC Circuits	EET-1160 and EET-1170	DC Circuits	3 Cr.
CTEET003 Programmable Logic Controls	EET-2520	Programmable Logic Controllers	3 Cr.
Emergency Medical Technology <i>Student Requirement: Current Ohio EMT-B or EMT-P certificate depending on the level to which the student is applying</i>			
CTEMTB002 EMT-Basic	EMT-1302 and EMT 130L	Emergency Medical Technician – Basic EMT Basic Lab	6 Cr. 1 Cr.
CTEMTP004 EMT-Paramedic	EMT-1310 and EMT-2330 and EMT-2340 and EMT-2350 and EMT-2360 and EMT-2370	Cardiopulmonary Resuscitation Paramedic Theory I Paramedic Theory II Paramedic Theory III Paramedic Theory IV Paramedic Theory V	1 Cr. 6 Cr. 6 Cr. 6 Cr. 6 Cr. 5 Cr.
Fire Science Technology <i>Student Requirement: Current Ohio Fire Fighter Certification FFI or FFII depending on the level to which the student is applying</i>			
CTFFI002 Fire Fighter I	FIRE-1100 and EMT-1320	Principles of Emergency Services Heavy Rescue	3 Cr. 2 Cr.

CTFFII03 Fire Fighter II	FIRE-1100 and FIRE-1200	Principles of Emergency Services	3 Cr.
		Principles of Fire and Emergency Services Safety and Survival	2 Cr.
	and FIRE 1500 and FIRE-2321	Fire Behavior and Combustion	2 Cr.
	and EMT-1320 and EMT-1330	Fire Protection Systems	2 Cr.
		Heavy Rescue	2 Cr.
		Defensive Driving - EMT	1 Cr.
Information Technology			
<i>Student Requirement: Must access credit within 3 years of program completion or within currency of certificate or license. Please see below for the specific requirements for each CTAN.</i>			
CTIT001 Basic <i>Student Requirement: Passage of OCTA End of Program Assessment, IC³Certificate or ICDL Certificate</i>	IT-1010	Introduction to Microcomputer Applications	3 Cr.
CTIT002 Network+ <i>Student Requirement: Passage of OCTA End of Program Assessment, Comp TIA Network + Certificate, Cisco Certified Network Associate (CCNA) Certificate or Cisco Certified Entry Network Technician (CCENT) Certificate</i>	ITNT-2300	Network Fundamentals	3 Cr.
CTIT003 A+ Essentials <i>Student Requirement: Passage of OCTA End of Program Assessment or CompTIA A+ Essentials Certificate</i>	EET-1015	Introduction to Computer Maintenance and Repair	3 Cr.
CTIT007 Cisco Exploration I <i>Student Requirement: CCNA Certificate, CCENT Certificate or Passage of Semester Tests in Cisco/CCNA Discovery I & II or Cisco/CCNA Exploration I</i>	EET-1301	Cisco I: Networking Technologies	3 Cr.
CTIT008 Cisco Exploration II <i>Student Requirement: CCNA Certificate, CCENT Certificate or Passage of Semester Tests in Cisco/CCNA Discovery III & IV or Cisco/CCNA Exploration II</i>	EET-1311	Cisco II: Basic Router Technologies	3 Cr.
CTIT009 Cisco Exploration III <i>Student Requirement: CCNA Certificate or Passage of Semester Test in Cisco/CCNA Exploration III</i>	EET-2301	Cisco III: LAN Switching and Wireless	3 Cr.

Appendix III: Career Technical Assurance Guides

CTIT010 Cisco Exploration IV <i>Student Requirement: CCNA Certificate or Passage of Semester Test in Cisco/CCNA Exploration IV</i>	EET 2311	Cisco IV: WAN Technologies	3 Cr.
CTIT013 Windows Server 2003 <i>Student Requirement: Microsoft Managing and Maintaining a Microsoft Windows Server 2003 environment (MS Examination 70-290)</i>	ITNT-2320	Network Administration I	3 Cr.
Mechanical Engineering Technology <i>Student Requirement: Proof of satisfactory course completion</i>			
CTMET004 Manufacturing Processes	MET 1240	Machine Tools and Manufacturing Processes	3 Cr.
CTMET005	MET-2041	CAD II & GD & T	3 Cr.
Medical Assisting Technology <i>Student Requirement: CMA-AAMA or RMA-AMT Credentials</i>			
CTMAT004 Basic Administrative Functions and CTMAT005 Bookkeeping Functions	MA-1503 and MA-150L	Administrative Procedures for the Medical Office Administrative Procedures Laboratory	2 Cr. 1 Cr.
CTMAT006 Process Insurance Claims	MA-1110	Reimbursement for Physicians Services	2 Cr.
CTMAT008 Fundamental Procedures	MA-1401 and MA-140L	Basics Clinical Medical Assisting Basics Clinical Medical Assisting Lab	1 Cr. 1 Cr.
CTMAT009 Specimen Collection	MA-1321 and MA-132L	Medical Office Laboratory Procedures Medical Office Laboratory Procedures	2 Cr. 1 Cr.
CTMAT010 Diagnostic Testing	MA-2412 and MA-241L	Advanced Clinical Medical Assisting Advanced Clinical Assisting Lab	2 Cr. 1 Cr.
CTMAT011 Patient Care	HTEC-1610 and MA-2860 and MA-2980	Introduction to Pharmacology Medical Assisting Practicum Medical Assisting Seminar	2 Cr. 2 Cr. 1 Cr.
Nursing – Practical Nursing to Associate Degree			
CTPNNUR001 Practical Nursing Program		Students completing Tri-C's LPN program are guaranteed to receive 30% of the technical credit in a public associate degree registered nursing program. The institution transferring to would determine the specific courses eligible to receive.	

<p>CTPADNURS002</p> <p><i>Student Requirement: LPN <u>and</u> successful completion of ONAM Transition course.</i></p>	<p>NURS-1300 and NURS-1450 and NURS-1600</p>	<p>Health Assessment</p> <p>Self-Care Needs: Adult Life Span</p> <p>Health Deviations I</p>	<p>2 Cr.</p> <p>8 Cr.</p> <p>8 Cr.</p>
<p>Police Officer Training</p>			
<p>CTBPO</p> <p>Basic Police Officer</p> <p><i>Student Requirement: current and valid state of Ohio Peace Officer Basic Training certificate/letter <u>and</u> completion of training courses offered by an Ohio public state assisted career-technical (secondary or adult) or state supported college or university that is in good standing with the Ohio Attorney General's Ohio Peace Officer Training Commission to deliver the Peace Officer Basic Training.</i></p>	<p>HLTH-1230 and CJ-1300 and CJ-1310 and CJ-2370 and CJ-2380 and PE-1000 and PE-1190</p>	<p>Standard First Aid & Personal Safety</p> <p>Patrol Operations</p> <p>Traffic Enforcement and Investigation</p> <p>Fire Arms Techniques</p> <p>Defensive Driving</p> <p>Personal Fitness</p> <p>Self Defense I</p>	<p>1 Cr.</p> <p>4 Cr.</p> <p>3 Cr.</p> <p>3 Cr.</p> <p>2 Cr.</p> <p>2 Cr.</p> <p>1 Cr.</p>

Appendix IV: Semester Course Numbering

APPENDIX IV Semester Course Numbering

Description

Developmental Courses	0800 to 0990	
	<u>Freshman-Level No.</u>	<u>Sophomore-Level No.</u>
Introductory/Non-Majors/ Basic Courses	1000 to 1290	---
Majors/Technical Courses	1300 to 1790	2000 to 2790
Special Topics Courses*	1800 to 1819	2800 to 2819
Honors Special Topics	180H	280H
Independent Study/Research Courses	1820	2820
Honors Independent Study/Research	182H	282H
Independent Study/Research Courses (2 hour Lab)	182S	282S
Independent Study/Research Courses (3 hour Lab)	182T	282T
Cooperative Education Courses	---	2830
Practicum	1840 to 1870	2840 to 2870
Clinicals (Nursing and Practical Nursing only)	1880 to 1900	2880 to 2900
Directed Practice	1910 to 1930 (Radiography uses additional course numbers)	2910 to 2930
Field Experience	1940 to 1960	2940 to 2960
Seminar	1970 to 1980	2970 to 2980
Capstone Course	---	2990

Note: Modular courses are identified by use of the letters "A through E" instead of fourth digit such as "0". Some laboratory courses are identified by the letter "L" instead of fourth digit such as "0". Independent Study/Research labs are identified by letters "S" and "T" instead of the fourth digit "0". Honors courses that may replace a current course use the letter "H" in the fourth position (such as ENG-101H for ENG-1010).

*Prior to Summer 2006, Special Topics courses were numbered as follows: 1800/2800 (lecture); 181S/281S (2 hour lab); 181T/281T (3 hour lab); and 181P/281P (practicum).

APPENDIX V Equivalent Courses

The Equivalency Chart lists current semester courses that have equivalencies and semester courses that have been officially deleted and therefore are unavailable to students. Each current/deleted course is paired with a course replacement. The course replacement is identical in content, and has been renumbered to meet new degree requirements, or is very similar in content and instructional function and has been declared equivalent by content experts in the specific discipline. Active equivalent semester courses have sufficient content similar in nature and instructional function and have been declared equivalent. These course equivalents will be used consistently College-wide.

The concept of repeated courses, point of graduation and point of course completion are important elements of equivalent courses. These elements are explained below.

Repeated Course: if identified as equivalent, renumbered course may be treated as repeats.

The Equivalent Course Chart identifies a new course as equivalent to a current or deleted course. These new courses carry a different course number and may also carry a different subject code. These identified equivalent renumbered courses will be treated as repeats under the College's repeated course rules, i.e., credit is earned for only one completion and the single highest grade is computed into the student's grade point average.

Repeated Modularized Courses: all modularized courses together are equivalent to their source course and may be treated as repeats.

Source courses that have been modularized are indicated in the Course Descriptions of the College Catalog and may be identified by use of letters "A" through "E" in the

fourth position of the course number. Modular courses, when all are completed, are equivalent to the source course. To meet degree requirements, completion of either the source course or all its modules is required. When a source course is used to meet degree requirements, none of the modular courses may be used; and when modular courses are used to meet degree requirements, the source course may not be used.

Since modular courses are equivalent to their source course, modular courses will be treated as repeats under the College repeated course rules provided that the earned grade in each of the modular courses is higher than the grade earned in the source course. A source course may be treated as a repeat of all the modules.

Point of Graduation: if a course is a 2000-level course at the time the student graduates, the credits may apply to the 2000-level degree requirement.

A course may be renumbered from a 1000-level course number to a 2000-level course number. The degree requirements for the Associate of Arts, Associate of Science, Associate of Applied Business and Associate of Applied Science, effective Fall 2001, require 20 semester credits at the 2000-level. Students who took a 1000-level course that has since been renumbered to a 2000-level course may use that 2000-level course to meet the 2000-level requirement.

Point of Course Completion: if a course was taken when it carried a 2000-level course number, the semester credits may be applied to the 2000-level degree requirement.

A course may be renumbered from a 2000-level course number to a 1000-level course number. The student may apply the course to the 20 semester credits at the 2000-level requirement if the course carried a 2000-level course number at the time the student took the course

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
ACCT-1011 (3 Cr.)	Business Math Applications	ACCT-1010 (3 Cr.)		
ACCT-1041 (4 Cr.)	Individual Taxation	ACCT-1040 (3 Cr.)		
ACCT-2995 (3 Cr.)	Accounting Technology	ACCT-1321 (4 Cr.)	ACCT-1320 (4 Cr.)	
ACCT-2041 (4 Cr.)	Business Taxation	ACCT-2040 (3 Cr.)		
ACCT-2500 (4 Cr.)	Government/Non-Profit Accounting	ACCT-250A (2 Cr.) & ACCT-250B (2 Cr.)		
AOS-1201 (4 Cr.)	Word Processing I	AOS-1200 (3 Cr.)	ITAP-1200 (3 Cr.)	OADM-2300 (3 Cr.)
		AOS-1230 (3 Cr.)	ITAP-1230 (2 Cr.)	OADM-1310 (3 Cr.)

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
AOS-1220 (2 Cr.)	Speed Building	ITAP-1220 (2 Cr.)	OADM-1030 (2 Cr.)	
AOS-1241 (3 Cr.)	Records Management	ITAP-1240 (3 Cr.)	OADM-1040 (3 Cr.)	AOS-1240 (3 Cr.)
AOS-1250 (3 Cr.)	Electronic Spreadsheet Use and Design	ITAP-1250 (3 Cr.)	OADM-1050 (3 Cr.)	
AOS-2200 (3 Cr.)	Word Processing II	ITAP-2200 (3 Cr.)		
AOS-2210 (3 Cr.)	Presentation Software	ITAP-2210 (3 Cr.)		
AOS-2270 (3 Cr.)	Desktop Publishing	ITAP-2270 (3 Cr.)		
AOS-2410 (3 Cr.)	Office Management	BADM-2410 (3 Cr.)		
AOS-2990 (3 Cr.)	Office Procedures and Practices	BADM-2990 (3 Cr.)	OADM-2990 (3 Cr.)	
ART-2020 (3 Cr.)	Art History Survey: Prehistoric to Renaissance	ART-1020 (3 Cr.)		
ART-2030 (3 Cr.)	Art History Survey: Late Renaissance to Present	ART-1030 (3 Cr.)		
ART-1091 (3 Cr.)	Color Theory & Application	ART-1090 (3 Cr.)		
ART-1301 (3 Cr.)	Graphic Design	ART-1300 (3 Cr.)		
ART-1311 (3 Cr.)	Graphic Design II	ART-1310 (3 Cr.)		
ART-2151 (3 Cr.)	Animation for Web and Media	ART-2150 (3 Cr.)		
ART-2180 (3 Cr.)	Sculpture II	ART-1110 (3 Cr.)		
ART-2190 (3 Cr.)	Ceramics II	ART-1710 (3 Cr.)		
ASL-1001 (2 Cr.)	Fingerspelling	ASL-1000 (1 Cr.)		
ASL-2411 (4 Cr.)	Advanced American Sign Language	ASL-2410 (3 Cr.)		
ATCT-1301 (2 Cr.)	Introduction to Carpentry	ATCT-1300 (2 Cr.)		
ATCT-1320 (2 Cr.)	Introduction to Hand and Power Tools	ATCT-2320 (2 Cr.)		
ATCT-1331 (2 Cr.)	Concrete Footers and Walls	ATCT-1330 (2 Cr.)		
ATCT-1351 (2 Cr.)	Metal Studs and Dry Walls	ATCT-1350 (2 Cr.)		
ATCT-1381 (2 Cr.)	Wood Framing	ATCT-1380 (2 Cr.)		
ATCT-1491 (2 Cr.)	Residential Steel Framing	ATCT-1490 (2 Cr.)		
ATCT-2341 (2 Cr.)	Concrete Specialties	ATCT-2340 (2 Cr.)		
ATCT-2361 (2 Cr.)	Suspended Ceilings	ATCT-2360 (2 Cr.)		
ATCT-2511 (2 Cr.)	Concrete Columns and Decks	ATCT-2510 (2 Cr.)		
AUTO-1001 (2 Cr.)	Auto Maintenance/Consumer Issues	AUTO-1000 (2 Cr.)		
AUTO-1501 (2 Cr.)	Automotive Electrical Fundamentals	AUTO-1500 (2 Cr.)		
AUTO-2701 (3 Cr.)	Automotive Service Operations	AUTO-2700 (2 Cr.)		
BADM-1000 (2 Cr.)	Business Language Skills	OADM-1000 (2 Cr.)		
BADM-1121 (4 Cr.)	Principles of Management and Organizational Behavior	BADM-1120 (4 Cr.)	BADM-2220 (3 Cr.)	BADM-2200 (3 Cr.)
BADM-2010 (3 Cr.)	Business Communications	OADM-2010 (3 Cr.)		
BADM-2120 (3 Cr.)	Logistics Management	BADM-2300 (3 Cr.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
BADM-2501 (3 Cr.)	Business Strategies	BADM-2500 (3 Cr.)		
BADM-2600 (2 Cr.)	Introduction to World Trade	MARK-2110 (2 Cr.)		
BIO-2331 (4 Cr.) & BIO-2341 (4 Cr.)	Anatomy and Physiology I & Anatomy and Physiology II	BIO-2330 (4 Cr.) & BIO-2340 (4 Cr.)	BIO-1430 (4 Cr.) & BIO-1440 (4 Cr.)	
BIO-233A (2 Cr.) & BIO-234A (2 Cr.)	A & P I: Skeletal & Muscular Systems & A & P II: Cardiovascular, Lymphatic, Respiratory, and Urinary Systems	BIO-2330 (4 Cr.)	BIO-1430 (4 Cr.)	
BIO-233B (4 Cr.) & BIO-234B (4 Cr.)	A & P I: Nervous, Integumentary, and Endocrine Systems & A&P II: Digestive, Immune, Reproductive Systems	BIO-2340 (4 Cr.)	BIO-1440 (4 Cr.)	
C&CR-1330 (2 Cr.) & C&CR-1340 (2 Cr.)	Realttime Theory II & Realttime Theory III	C&CR-1310 (2 Cr.)	C&CR-1320 (4 Cr.)	
C&CR-1521 (2 Cr.)	Realttime Theory Reinforcement	C&CR-1520 (1 Cr.)		
C&CR-1600 (5 Cr.)	Court Reporting Technology	C&CR-1370 (3 Cr.)	C&CR-1371 (2 Cr.) & C&CR-1310 (2 Cr.)	
C&CR-2601 (3 Cr.)	Technical Terminology I	C&CR-2600 (3 Cr.)		
C&CR-2651 (3 Cr.)	Technical Terminology II	C&CR-2650 (2 Cr.)		
CHIN-1011 (4 Cr.)	Beginning Chinese Language and Culture I	CHIN-1010 (4 Cr.)		
CHIN-1021 (4 Cr.)	Beginning Chinese Language and Culture II	CHIN-1020 (4 Cr.)		
CJ-1000 (3 Cr.)	Introduction to Criminal Justice	LAW-1000 (3 Cr.)		
CJ-1010 (2 Cr.)	Computers in Criminal Justice	LAW-1010 (2 Cr.)		
CJ-1050 (2 Cr.)	Introduction to Security	LAW-1050 (2 Cr.)		
CJ-1070 (3 Cr.)	Introduction to Corrections	LAW-1070 (2 Cr.)		
CJ-1111 (3 Cr.)	Constitutional Law for Police	LAW-1111 (3 Cr.)	LAW-1110 (3 Cr.)	
CJ-1120 (2 Cr.)	Criminal Court Procedure	LAW-1120 (2 Cr.)		
CJ-1130 (2 Cr.)	Criminal Evidence	LAW-1130 (2 Cr.)		
CJ-1120 (2 Cr.) & CJ-1130 (2 Cr.)	Criminal Court Procedure & Criminal Evidence	LAW-1100 (3 Cr.)		
CJ-1200 (3 Cr.)	Economic Crime Investigation	LAW-1200 (3 Cr.)		
CJ-1300 (4 Cr.)	Patrol Operations	LAW-1300 (4 Cr.)		
CJ-1310 (3 Cr.)	Traffic Enforcement and Investigation	LAW-1310 (3 Cr.)		
CJ-1320 (2 Cr.)	Ethics in Criminal Justice	LAW-1320 (2 Cr.)		
CJ-1330 (3 Cr.)	Criminal Law	LAW-1330 (2 Cr.)	LAW-2320 (3 Cr.)	
CJ-1400 (4 Cr.)	Assets Protection	LAW-1400 (4 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
CJ-1500 (4 Cr.)	Community Intervention Resources	LAW-1500 (4 Cr.)		
CJ-2200 (3 Cr.)	Interviews & Interrogations	LAW-2200 (3 Cr.)		
CJ-2210 (3 Cr.)	Organized Crime	LAW-2210 (3 Cr.)		
CJ-2230 (3 Cr.)	Undercover Operations	LAW-2230 (3 Cr.)		
CJ-2300 (3 Cr.)	Juvenile Delinquency	LAW-2300 (3 Cr.)		
CJ-2350 (3 Cr.)	Special Issues in Criminal Justice	LAW-2350 (3 Cr.)		
CJ-2360 (3 Cr.)	Community Oriented Policing	LAW-2360 (3 Cr.)		
CJ-2370 (3 Cr.)	Fire Arms Techniques	LAW-2370 (3 Cr.)		
CJ-2380 (3 Cr.)	Defensive Driving	LAW-2380 (3 Cr.)		
CJ-2390 (4 Cr.)	The Investigative Process	LAW-2390 (4 Cr.)	LAW-2310 (4 Cr.)	
CJ-2400 (4 Cr.)	Security Management	LAW-2400 (4 Cr.)		
CJ-2410 (3 Cr.)	Security Investigation	LAW-2410 (3 Cr.)		
CJ-2420 (3 Cr.)	Legal Aspects of Private Security	LAW-2420 (3 Cr.)		
CJ-2440 (2 Cr.)	Protection Services	LAW-2440 (2 Cr.)		
CJ-2510 (4 Cr.)	Community Supervision and Aftercare	LAW-2510 (4 Cr.)		
CJ-2530 (3 Cr.)	Correctional Case Management	LAW-2530 (3 Cr.)		
CJ-2830 (1-3 Cr.)	Cooperative Field Experience	LAW-2830 (1-3 Cr.)		
CJ-2840 (3 Cr.)	Corrections: Principles & Practices	LAW-2540 (3 Cr.)		
CJ-2990 (4 Cr.)	Issues in Supervision	LAW-2990 (4 Cr.)	LAW-2340 (3 Cr.)	
CNST-1281 (3 Cr.)	Construction Engineering Orientation	CNST-1280 (2 Cr.)		
CNST-1410 (3 Cr.)	Architectural CAD I	ARCH-1410 (3 Cr.)		
CNST-1420 (3 Cr.)	Architectural CAD II	ARCH-1420 (3 Cr.)		
CNST-2110 (3 Cr.)	Basic Survey Practices	ARCH-2110 (3 Cr.)		
CNST-2130 (3 Cr.)	Construction Methods, Materials and Equipment	ARCH-2320 (3 Cr.)		
CNST-2210 (3 Cr.)	Mechanical & Electrical Systems	ARCH-2210 (3 Cr.)		
CNST-2250 (3 Cr.)	Advanced Construction Print Reading	CNST-2120 (3 Cr.)	ARCH-1430 (3 Cr.)	
CNST-2330 (3 Cr.)	Construction Scheduling	CNST-2530 (3 Cr.)	ARCH-2420 (3 Cr.)	
CNST-2410 (3 Cr.)	Principles of Structural Design	ARCH-2410 (3 Cr.)		
CNST-2631 (3 Cr.)	Construction Management Systems	CNST-2630 (3 Cr.)	ARCH-2220 (3 Cr.)	
CNST-2990 (3 Cr.)	Construction Estimating and Cost Analysis	CNST-2320 (3 Cr.)	ARCH-2310 (3 Cr.)	
DAST-1200 (3 Cr.)	Oral Structure and Development	BIO-1200 (3 Cr.)		
DENT-1210 (3 Cr.)	General and Oral Histopathology	BIO-1210 (4 Cr.)		
DENT-1311 (2 Cr.)	Dental Anatomy, Histology & Embryology	DENT-1310 (2 Cr.)		
DENT-1431 (2 Cr.)	Head and Neck Anatomy	DENT-1430 (3 Cr.)		
DENT-2332 (2 Cr.)	Pharmacology & Therapeutics	DENT-2331 (3 Cr.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
DENT-2340 (1 Cr.) & DENT-2440 (1 Cr.)	Community Oral Health I & Community Oral Health II	DENT-2410 (2 Cr.)		
DENT-2990 (1 Cr.)	Dental Hygiene Practice	DENT-2430 (1 Cr.)		
DIET-1200 (3 Cr.) & DIET-1320 (1 Cr.)	Basic Nutrition Nutrition Applications	DIET-1300 (4 Cr.)		
DIET-1331 (4 Cr.)	Food Production Fundamentals	DIET-1330 (6 Cr.)		
DIET-2862 (2 Cr.) & DIET-2863 (2 Cr.)	Geriatric Nutrition Practicum Community Nutrition Practicum	DIET-2861 (4 Cr.)		
DIET 2301 (3 Cr.)	Medical Nutrition Therapy I	DIET-2300 (2 Cr.)		
DIET-2311 (3 Cr.)	Medical Nutrition Therapy II	DIET-2310 (2 Cr.)		
DIET-2410 (1 Cr.) & DIET-2420 (1 Cr.) & DIET-2430 (1 Cr.)	Life Cycle Nutrition - Pregnancy and Lactation & Life Cycle Nutrition - Nutrition for Children & Life Cycle Nutrition - Nutrition Through Adulthood	DIET-2400 (3 Cr.)		
DIET-2501 (2 Cr.)	Nutrition Applications in Long Term Care	DIET-2500 (3 Cr.)		
DIS-1300 (3 Cr.)	Interpreting Fundamentals	ITP-1300 (3 Cr.)		
DIS-1310 (2 Cr.)	Interpreting I	ITP-1310 (2 Cr.)		
DIS-1402 (3 Cr.)	ASL Linguistics	DIS-1401 (3 Cr.)	ITP-1400 (2 Cr.)	
DIS-1850 (2 Cr.)	Practicum I	ITP-1850 (2 Cr.)		
DIS-1970 (1 Cr.)	Practicum Seminar I	ITP-1970 (1 Cr.)		
DIS-2300 (2 Cr.)	Transliterating	ITP-2300 (2 Cr.)		
DIS-2310 (2 Cr.)	Interpreting II	ITP-2310 (2 Cr.)		
DIS-2410 (2 Cr.)	Voicing	ITP-2410 (2 Cr.)		
DIS-2850 (2 Cr.)	Practicum II	ITP-2850 (2 Cr.)		
DIS-2970 (1 Cr.)	Practicum Seminar II	ITP-2970 (1 Cr.)		
DMS-1071 (2 Cr.)	Concepts of Physics in Diagnostic Sonography	PHYS-1070 (2 Cr.)	DMS-1070 (2 Cr.)	
DMS-1303 (2 Cr.)	Introduction to Sonography	DMS-1302 (1 Cr.)		
DMS-1311 (2 Cr.)	Initial Sonographic Scanning	DMS-1310 (2 Cr.)		
DMS-1351 (1 Cr.)	Patient Care Skills	DMS-1340 (1 Cr.) & DMS-1350 (1 Cr.)		
DMS-1381 (3 Cr.)	Cardiac Diagnostic Procedures	DMS-1380 (4 Cr.)		
DMS-1401 (3 Cr.)	Abdominal Sonography I	DMS-1400 (3 Cr.)		
DMS-1602 (4 Cr.)	Echocardiography I	DMS-1360 (2 Cr.) & DMS-1601 (3 Cr.)		
DMS-1702 (4 Cr.)	Vascular Sonography I	DMS-1360 (2 Cr.) & DMS-1701 (4 Cr.)		
DMS-1940 (1 Cr.)	Field Experience I	DMS-1911 (2 Cr.)	DMS-1910 (3 Cr.)	
DMS-1950 (2 Cr.)	Field Experience II	DMS-1921 (4 Cr.)	DMS-1920 (4 Cr.)	
DMS-2301 (2 Cr.)	Intermediate Sonographic Scanning	DMS-2300 (1 Cr.) & DMS-2310 (1 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
DMS-2330 (3 Cr.)	Sonographic Pathology	DMS-1330 (3 Cr.)		
DMS-2401 (4 Cr.)	Abdominal Sonography II	DMS-2400 (4 Cr.)		
DMS-2602 (4 Cr.)	Echocardiography II	DMS-1370 (2 Cr.) & DMS-2601 (3 Cr.)		
DMS-2702 (4 Cr.)	Vascular Sonography II	DMS-1370 (2 Cr.) & DMS-2701 (3 Cr.)		
DMS-2940 (3 Cr.)	Field Experience III	DMS-1922 (6 Cr.)		
DMS-2981 (1 Cr.) & DMS-2985 (1 Cr.)	Specialty Registry Review & Physics Review	DMS-2980 (2 Cr.)		
DMS-2991 (1 Cr.)	Sonography Capstone	DMS-2990 (1 Cr.)		
ECED-1301 (3 Cr.)	Language and Literacy in an Integrated Curriculum	ECED-1300 (3 Cr.)		
ECED-1311 (3 Cr.)	Art and Creative Expression in an Integrated Curriculum	ECED-1310 (2 Cr.)		
ECED-1321 (3 Cr.)	Math and Science Inquiry in an Integrated Curriculum	ECED-1320 (2 Cr.)		
ECED-1331 (3 Cr.)	Music & Movement in an Integrated Curriculum	ECED-1330 (4 Cr.)		
ECED-2401 (3 Cr.)	Families, Communities & Schools	ECED-2400 (2 Cr.)		
ECED-2700 (3 Cr.)	Including Children with Special Needs	ECED-1700 (3 Cr.)		
ECON-2610 (4 Cr.)	Principles of Macroeconomics	ECON-1610 (3 Cr.)		
ECON-2620 (4 Cr.)	Principles of Microeconomics	ECON-1620 (3 Cr.)		
EDUC-1011 (3 Cr.)	Introduction to Education	EDUC-1010 (3 Cr.)		
EDUC-1411 (3 Cr.)	Individuals with Exceptionalities	EDUC-1410 (3 Cr.)		
EET-1015 (3 Cr.)	Introduction to Computer Maintenance and Repair	EET-1001 (3 Cr.)	EET-1000 (2 Cr.)	
EET-1035 (4 Cr.)	Operating Systems and Software for PC Technicians	EET-1021 (3 Cr.) & EET-1031 (3 Cr.)	EET-1010 (2 Cr.) & EET-1020 (2 Cr.) & EET-1030 (2 Cr.)	
EET-1055 (4 Cr.)	Computer Hardware Support	EET-1051 (2 Cr.) & EET-1071 (2 Cr.) & EET-1091 (1 Cr.)	EET-1050 (3 Cr.) & EET-1070 (1 Cr.) & EET-1040 (1 Cr.) & EET-1090 (1 Cr.)	
EET-1081 (1 Cr.)	Computer User Support	EET-1080 (1 Cr.)		
EET-1160 (2 Cr.) & EET-1170 (2 Cr.)	Direct Current Circuits I & Direct Current Circuits II	EET-1110 (3 Cr.)		
EET-1180 (1 Cr.)	Surface Mount Soldering	EET-2160 (1 Cr.)		
EET-1302 (3 Cr.)	Cisco I: Basic Networking Technologies	EET-1300 (2 Cr.)	EET-1301 (3 Cr.)	
EET-1312 (3 Cr.)	Cisco II: Basic Routing & Switching	EET-1310 (2 Cr.)	EET-1311 (3 Cr.)	
EET-2111 (3 Cr.)	Industrial Electronics I	EET-2110 (3 Cr.)		
EET-2241 (3 Cr.)	Microprocessors and Hardware Interface with C Programming	EET-2240 (3 Cr.)		
EET-2302 (3 Cr.)	Cisco III: Intermediate Routing and Switching	EET-2300 (2 Cr.)	EET-2301 (3 Cr.)	

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
EET-2312 (3 Cr.)	Cisco IV: Basic WAN Technologies	EET-2301 (2 Cr.)	EET-2311 (3 Cr.)	
EET-2901 (3 Cr.)	Clinical Internship	EET-2900 (4 Cr.)		
END-2411 (3 Cr.)	Neurophysiology of Electroencephalography/ Sleep Disorders	END-2410 (2 Cr.)	END-1400 (2 Cr.)	
END-2911 (2 Cr.)	END Directed Practice II	END-2910 (4 Cr.)		
EMT-1302 (6 Cr.) & EMT-130L (1 Cr.)	Emergency Medical Technician - Basic & EMT Basic Practical Lab	EMT-1300 (5 Cr.) & EMT-1740 (1 Cr.)	EMT-1301 (7 Cr.)	
EMT-2330 (6 Cr.) & EMT-2340 (6 Cr.)	Paramedic Theory I & Paramedic Theory II	EMT-2310 (10 Cr.)		
EMT-2350 (6 Cr.) & EMT-2360 (6 Cr.)	Paramedic Theory III & Paramedic Theory IV	EMT-2320 (10 Cr.)		
EHST-1301 (3 Cr.) & EHST-1330 (3 Cr.)	Introduction to Environmental Technology & Hazardous Waste Operations and Emergency Response	EHST-1300 (4 Cr.)		
EHST-2220 (2 Cr.)	EH&S Management Systems	EHST-1320 (2 Cr.)	EHST-132A (1 Cr.) & EHST-132B (1 Cr.)	
EHST-2341 (2 Cr.)	Hazardous Materials Transportation	EHST-2340 (2 Cr.)		
EHST-2351 (2 Cr.)	Emergency Planning and Response	EHST-2350 (2 Cr.)		
EHST-2361 (4 Cr.)	Environmental Sampling and Analysis	EHST-2360 (4 Cr.)		
EHST-2371 (1 Cr.)	Occupational Safety and Health Act/Department of Transportation Refresher	EHST-2370 (2 Cr.)		
EHST-2991 (3 Cr.)	Professional Practice	EHST-2400 (1 Cr.)		
EHST-2820 (1 Cr.)	*Contact program manager to arrange independent study for students who need EHST-2990 to complete program	EHST-2990 (1 Cr.)		
ENG-2151 (3 Cr.)	Technical Writing	ENG-2150 (3 Cr.)		
ENG-2601 (3 Cr.)	Literature for Children and Adolescents	ENG-2600 (3 Cr.)		
ESL-1121 (4 Cr.)	English as a Second Language: Reading & Writing I	ESL-1120 (5 Cr.)		
ESL-1131 (4 Cr.)	English as a Second Language: Speaking and Listening I	ESL-1130 (3 Cr.)		
ESL-1221 (4 Cr.)	English as a Second Language: Reading and Writing II	ESL-1220 (5 Cr.)		
ESL-1231 (4 Cr.)	English as a Second Language: Speaking and Listening II	ESL-1230 (3 Cr.)		
ESL-1321 (4 Cr.)	English as a Second Language: reading and Writing III	ESL-1320 (5 Cr.)		
ESL-1331 (4 Cr.)	English as a Second Language: Speaking and Listening III	ESL-1330 (3 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
FIN-1061 (3 Cr.)	Personal Finance	FIN-1060 (2 Cr.)		
FIRE-2321 (2 Cr.)	Fire Protection Systems	FIRE-2320 (3 Cr.)		
FIRE-2351 (3 Cr.)	Building Construction Fire Protection	FIRE-2350 (2 Cr.)		
FIRE-2401 (3 Cr.)	Fire Protection Hydraulics and Water Supply	FIRE-2400 (2 Cr.)		
GEN-1022 (3 Cr.)	Strategies for Success	GEN-1021 (3 Cr.)	GEN-1020 (2 Cr.)	
GEN-1032 (2 Cr.)	Information Literacy and Library Research	GEN-1031 (2 Cr.)	GEN-1030 (2 Cr.)	
HTEC-1040 (1 Cr.)	Health Career Exploration	HLTH-1200 (2 Cr.)		
HIM-1010 (1 Cr.)	Basic Medical Transcription	MA-1420 (1 Cr.)		
HIM-1112 (4 Cr.)	Physician Office Coding	HIM-1110 (2 Cr.)	HIM-1111 (3 Cr.)	
HIM-1111 (3 Cr.) & HIM-1120 (3 Cr.)	Physician Office Coding & Medical Billing Practices	MA-2520 (3 Cr.)		
HIM-1121 (2 Cr.)	Medical Billing Practices	HIM-1120 (3 Cr.)		
HIM-1301 (3 Cr.)	Introduction to Health Information Management	HIM-1300 (4 Cr.)		
HIM-1311 (3 Cr.)	Legal Aspects of Health Care	HIM-1310 (2 Cr.)		
HIM-1401 (2 Cr.)	Systems in Health Care Delivery	HIM-1400 (3 Cr.)		
HIM-1411 (2 Cr.)	Healthcare Statistical Application & Research	HIM-1410 (2 Cr.)		
HIM-1423 (3 Cr.)	Health Data Documentation, Sources, and Classification Systems	HIM-1421 (3 Cr.)	HM-1420 (3 Cr.)	HIM-1422 (3 Cr.)
HIM-1431 (3 Cr.)	Healthcare Informatics and Information Management	HIM-1430 (2 Cr.)		
HIM-2130 (2 Cr.)	Coding with CPT	HIM-1130 (2 Cr.)		
HIM-2130 (2 Cr.) & HIM-2150 (2 Cr.)	Coding with CPT & Coding with ICD-9-CM	HIM-2300 (4 Cr.)		
HIM-2150 (2 Cr.)	Coding with ICD-9-CM	HIM-1150 (2 Cr.)		
HIM-2312 (3 Cr.)	Quality Assessment & Improvement	HIM-2311 (2 Cr.)	HIM-2310 (3 Cr.)	
HIM-2401 (2 Cr.) & HIM-2430 (2 Cr.)	Intermediate Coding & Medical Reimbursement Methodologies	HIM-2400 (4 Cr.)		
HIM-2851 (3 Cr.)	Practicum I	HIM-2850 (2 Cr.)		
HIM-2861 (3 Cr.)	Practicum II	HIM-2860 (2 Cr.)		
HIST-2150 (3 Cr.)	African American History to 1877	HIST-1710 (3 Cr.)		
HIST-2160 (3 Cr.)	African American History 1877-Present	HIST-1720 (3 Cr.)		
HIST-2051 (3 Cr.)	History of Russia to 1917	HIST-2050 (3 Cr.)		
HOSP-1031 (3 Cr.)	Fundamentals of Culinary Arts	HOSP-1030 (3 Cr.)		
HOSP-1360 (3 Cr.)	Fundamentals of Restaurant/ Foodservice Management	HOSP-1370 (3 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
HOSP-1451 (4 Cr.)	Contemporary Cuisine	HOSP-1450 (4 Cr.)		
HOSP-1552 (3 Cr.)	Baking Production and Sales I	HOSP-1550 (2 Cr.)	HOSP-1551 (3 Cr.)	
HOSP-1650 (2 Cr.) & HOSP-1680 (2 Cr.)	Dining Room Operations & Beverage Management	HOSP-1670 (3 Cr.)		
HOSP-1940 (1-3 Cr)	Culinary/Professional Baking Field Experience	HOSP-1860 (3 Cr.)	HOSP-186A (2 Cr.)	HOSP-186B (2 Cr.)
HOSP-1950 (1-3 Cr.)	Restaurant/Food Service Management Field Experience	HOSP-1860 (3 Cr.)	HOSP-186C (2 Cr.)	
HOSP-1960 (1-3 Cr.)	Lodging/Tourism Field Experience	HOSP-1860 (3 Cr.)	HOSP-186D (2 Cr.)	
HOSP-2340 (3 Cr.)	Menu Planning for Healthy Living	HOSP-1350 (3 Cr.)		
HOSP-2651 (4 Cr.)	Banquet Management and Production	HOSP-2650 (4 Cr.)		
HOSP-2700 (2 Cr.)	Hospitality Purchasing	HOSP-1700 (2 Cr.)		
HOSP-2861 (4 Cr.)	Lodging and Tourism Management	HOSP-2860 (4 Cr.)		
HOSP-2871 (2 Cr.)	Food & Beverage Management Experience	HOSP-2870 (4 Cr.)		
HOSP-2992 (2 Cr.) & HOSP-2560 (5 Cr.)	Culinary Evaluation and American Regional Cuisine & Garde Manger	HOSP-2990 (2 Cr.)	HOSP-2991 (3 Cr.)	
HS-1200 (4 Cr.)	Treatment Modalities and Diversity Issues in Chemical Dependency	HS-1310 (2 Cr.) & HS-2310 (2 Cr.)		
HS-1210 (2 Cr.)	Prevention and Chemical Dependency	HS-1320 (2 Cr.)		
HS-1220 (4 Cr.)	Diagnostic Tools and Legal Considerations	HS-1410 (2 Cr.) & HS-1420 (2 Cr.)		
HS-2200 (3 Cr.)	Ethics in Chemical Dependency	HS-2320 (2 Cr.)		
HS-2300 (4 Cr.)	Family Theory and Services	HS-2410 (2 Cr.)		
HS-1110 (3 Cr.)	Crisis Intervention and Child Abuse Issues	HS-2420 (2 Cr.)		
HS-2600 (4 Cr.)	Systems Approach to Case Management	HS-2510 (2 Cr.) & HS-2520 (2 Cr.)		
HUM-175H (3 Cr.)	Honors Forum: Critical Issues	HUM-1750 (3 Cr.)		
INTD-1111 (3 Cr.)	Introduction to Interior Design	INTD-1110 (2 Cr.)		
INTD-2851 (1 Cr.)	Interior Design Field Experience	INTD-2850 (3 Cr.)		
IT-1000 (2 Cr.)	Keyboarding	OADM-1010 (2 Cr.)		
IT-1010 (3 Cr.) & IT-1020 (2 Cr.)	Introduction to Microcomputer Applications & Information Technology Concepts	CS-1020 (3 Cr.)		
IT-1010 (3 Cr.)	Introduction to Microcomputer Applications	OADM-1020 (3 Cr.)		
IT-1030 (2 Cr.)	Internet Fundamentals	CS-1030 (2 Cr.)		
IT-1040 (3 Cr.)	Microcomputer Operating Systems	CS-1320 (3 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
IT-1050 (3 Cr.)	Programming Logic	CS-1350 (3 Cr.)		
IT-1060 (2 Cr.)	Introduction to Windows	OADM-1060 (2 Cr.)		
IT-2300 (3 Cr.)	Database Use and Design	CS-1410 (3 Cr.)		
IT-2351 (4 Cr.)	Enterprise Database Systems	IT-2350 (4 Cr.)		
IT-2700 (3 Cr.)	Systems Analysis and Design	CS-2700 (3 Cr.)		
ITMP-2670 (4 Cr.)	C/C++ Programming Language	CS-2670 (4 Cr.)		
ITMP-2990 (3 Cr.)	Microcomputer Project	CS-2500 (3 Cr.)		
ITNT-2300 (3 Cr.)	Network Fundamentals	CS-2400 (3 Cr.)		
JAPN-1011 (4 Cr.)	Beginning Japanese Language and Culture I	JAPN-1010 (4 Cr.)		
JAPN-1021 (4 Cr.)	Beginning Japanese Language and Culture II	JAPN-1020 (4 Cr.)		
JAPN-2011 (4 Cr.)	Intermediate Japanese Language and Culture I	JAPN-2010 (4 Cr.)		
JAPN-2021 (4 Cr.)	Intermediate Japanese Language and Culture II	JAPN-2020 (4 Cr.)		
JAPN-2411 (3 Cr.)	Advanced Japanese Language and Culture I	JAPN-2410 (3 Cr.)		
JAPN-2421 (3 Cr.)	Advanced Japanese Language and Culture II	JAPN-2420 (3 Cr.)		
JMC-1210 (3 Cr.)	Intro to Radio & Television	JMC-2210 (3 Cr.)		
MA-1110 (2 Cr.)	Reimbursement for Physician Services	HIM-1118 (1 Cr.)		
MA-1321 (2 Cr.) & MA-132L (1 Cr.)	Office Laboratory Procedures & Office Laboratory Procedures	MA-1300 (2 Cr.) & MA-1310 (2 Cr.)	MA-1320 (3 Cr.)	
MA-1401 (2 Cr.) & MA-140L (1 Cr.)	Basic Clinical Medical Assisting & Basic Clinical Medical Assisting Lab	MA-1400 (2 Cr.)		
MA-1503 (2 Cr.) & MA-150L (1 Cr.)	Administrative Procedures for the Medical Office & Administrative Procedures Lab	MA-1500 (3 Cr.)	MA-1501 (3 Cr.)	MA-1502 (3 Cr.) & MA-150L (1 Cr.)
MA-2010 (2 Cr.)	Medical Terminology II	MA-1030 (2 Cr.)		
MA-2412 (2 Cr.) & MA-241L (1 Cr.)	Advanced Clinical Medical Assisting & Advanced Clinical Medical Assisting Lab	MA-2410 (3 Cr.)	MA-2411 (3 Cr.)	MA-1410 (3 Cr.)
MATH-1141 (3 Cr.)	Applied Algebra and Mathematical Reasoning	MATH-1140 (2 Cr.)		
MATH-1270 (4 Cr.)	Intermediate Algebra	MATH-1200 (4 Cr.)		
MATH-1280 (5 Cr.)	Intermediate Algebra	MATH-1200 (4 Cr.)		
MATH-1521 (4 Cr.)	College Algebra	MATH-1520 (3 Cr.)		
MET-1120 (2 Cr.)	Computer Applications and Programming	MIT-1100 (2 Cr.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
MET-1230 (3 Cr.)	Drawing & AutoCAD	MET-1200 (2 Cr.) & MET-1220 (2 Cr.)	MIT-1200 (2 Cr.) & MIT-1220 (2 Cr.)	
MET-1240 (3 Cr.)	Machine Tools & Processes	MIT-1250 (3 Cr.)		
MET-1300 (3 Cr.)	Engineering Materials & Metallurgy	MIT-1300 (3 Cr.)		
MET-1400 (3 Cr.)	CNC Programming & Operations	MIT-1600 (3 Cr.)		
MET-1601 (3 Cr.)	Technical Statics	MET-1600 (2 Cr.)		
MET-1621 (3 Cr.)	Technical Dynamics	MET-1620 (2 Cr.)		
MET-2000 (3 Cr.)	CAD/CAM Processes	MIT-2000 (3 Cr.)	MIT-1700 (3 Cr.)	
MET-2041 (3 Cr.)	CAD II & GD&T	MET-2040 (3 Cr.)	MIT-2040 (3 Cr.)	MIT-1950 (3 Cr.)
MET-2050 (3 Cr.)	Solid Modeling in 3D	MIT-2051 (3 Cr.)	MIT-2050 (3 Cr.)	
MET-2220 (3 Cr.)	Advanced CAD/CAM Processes	MIT-2700 (3 Cr.)		
MET-2400 (3 Cr.)	Statistical Quality Control	MIT-2400 (3 Cr.)		
MET-2421 (2 Cr.)	Fundamentals of Engineering Economics	MET-2420 (4 Cr.)		
MET-2500 (3 Cr.)	Product Development & Manufacturing	MIT-2200 (3 Cr.)		
MET-2601 (3 Cr.)	3D Solid Modeling	MET-2600 (3 Cr.)		
MET-2730 (3 Cr.)	Intro to Manufacturing Management	MIT-2730 (3 Cr.)		
MET-2740 (3 Cr.)	Quality Manufacturing	MIT-2740 (3 Cr.)		
MET-2830 (1-3 Cr.)	Cooperative Field Experience	MIT-2830 (1-3 Cr.)		
MT-1242 (3 Cr.) & MT-1272 (3 Cr.)	Fundamentals of Somatic Studies I & Fundamentals of Somatic Studies II	MT-1240 (4 Cr.)	MT-1241 (4 Cr.)	
MT-1272 (3 Cr.) & MT-1280 (3 Cr.)	Fundamentals of Somatic Studies II & Fundamentals of Somatic Studies III	MT-1270 (4 Cr.)	MT-1271 (4 Cr.)	
MT-1302 (2 Cr.)	Massage Therapy I	MT-1300 (4 Cr.)	MT-1301 (3 Cr.)	
MT-1312 (3 Cr.)	Applied Musculo-Skeletal Anatomy	MT-1310 (3 Cr.)	MT-1311 (4 Cr.)	
MT-1321 (2 Cr.)	Functional Assessment in Massage Therapy	MT-1320 (3 Cr.)		
MT-1331 (3 Cr.)	Massage Therapy II	MT-1330 (3 Cr.)		
MT-2301 (3 Cr.)	Pathology for Massage Therapists	MT-2300 (4 Cr.)		
MT-2311 (3 Cr.)	Advanced Massage Therapy	MT-2310 (3 Cr.)		
MT-2350 (3 Cr.)	Massage Therapy Clinic I	MT-2341 (3 Cr.)	MT-2340 (2 Cr.)	MT-2342 (2 Cr.)
MT-2360 (3 Cr.)	Massage Therapy Clinic II	MT-2851 (3 Cr.)	MT-2850 (4 Cr.)	MT-2852 (2 Cr.)
MT-2701 (1 Cr.)	Comprehensive Somatic Studies for Massage Therapists	MT-2700 (2 Cr.)		
MT-2861 (3 Cr.)	Geriatric Massage Practicum	MT-2860 (4 Cr.)		
MT-2991 (1 Cr.)	Comprehensive Massage Therapy	MT-2990 (1 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
MUS-1460 (2 Cr.)	Applied Music I	MUS - All deleted Applied Music I classes are equivalent - see music department faculty coordinators		
MUS-1470 (2 Cr.)	Applied Music II	MUS - All deleted Applied Music II classes - see music department faculty coordinators		
MUS-2460 (2 Cr.)	Applied Music III	MUS - All deleted Applied Music III classes - see music department faculty coordinators		
MUS-2470 (2 Cr.)	Applied Music IV	MUS - All deleted Applied Music IV classes - see music department faculty coordinators		
NMED-1301 (3 Cr.) & NMED-130L (1 Cr.)	Nuclear Medicine Procedures I Nuclear Medicine Laboratory I	NMED-1300 (4 Cr.)		
NMED-2301 (3 Cr.) & NMED-230L (1 Cr.)	Nuclear Medicine Procedures II Nuclear Medicine Laboratory II	NMED-2300 (4 Cr.)		
NMED-2410 (4 Cr.)	Nuclear Medicine Safety & Biology	NMED-2400 (3 Cr.)		
NURS-1450 (8 Cr.)	Self Care Needs: Adult Life Span	NURS-1401 (4 Cr.) & NURS-1500 (4 Cr.)		
NURS-2501 (8 Cr.)	Health Deviations II	NURS-2500 (9 Cr.)		
OPT-1911 (4 Cr.)	Ophthalmic Assisting Directed Practice	OPT-1910 (4 Cr.)		
OPT-2861 (3 Cr.) & OPT-2970 (3 Cr.)	Optical Practicum I & Optical Practicum Seminar I	OPT-2330 (2 Cr.) & OPT-2430 (3 Cr.) & OPT-2530 (3 Cr.) & OPT-2630 (3 Cr.)		
OPT-2870 (3 Cr.) & OPT-2980 (3 Cr.)	Optical Practicum II & Optical Practicum Seminar II	OPT-2440 (3 Cr.) & OPT-2540 (3 Cr.) & OPT-2640 (2 Cr.) & OPT-2700 (3 Cr.) & OPT-2860 (2 Cr.)		
OTAT-1980 (2 Cr.)	Therapeutic Use of Self	MA-1980 (2 Cr.)		
PE-1031 (1 Cr.)	Introduction to Lifetime Fitness I	PE-1030 (1 Cr.)		
PE-1041 (1 Cr.)	Introduction to Lifetime Fitness II	PE-1040 (1 Cr.)		
PE-1051 (1 Cr.)	Adapted Lifetime Fitness	PE-1050 (1 Cr.)		
PE-1421 (2 Cr.)	Camping	PE-1420 (2 Cr.)		
PHIL-2031 (3 Cr.)	Philosophy of Science	PHIL-2030 (3 Cr.)		
PL-2420 (3 Cr.)	Probate Law	PL-1420 (3 Cr.)		
PL-2440 (3 Cr.) & PL-2460 (3 Cr.)	Business Transactions & Business Organizations	PL-1440 (4 Cr.)		
PL-1501 (2 Cr.)	Law Office Technology	PL-1500 (3 Cr.)		
PL-2301 (4 Cr.)	Torts and Evidence	PL-2300 (3 Cr.)		
PL-2851 (1 Cr.) & PL-2990 (2 Cr.)	Paralegal Practicum & Paralegal Capstone	PL-2850 (2 Cr.)		
POL-2030 (3 Cr.)	Comparative Politics	POL-1030 (3 Cr.)		
POL-2070 (3 Cr.)	International Relations	POL-1070 (3 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
POL-2100 (3 Cr.)	Constitutional Law	POL-1100 (3 Cr.)		
PST-1311 (3 Cr.)	Deciduous Woody Landscape Plants	PST-1310 (3 Cr.)		
PST-1321 (3 Cr.)	Evergreens, Groundcovers, & Herbaceous Landscape Plants	PST-1320 (3 Cr.)		
PST-1351 (3 Cr.)	Plant Production	PST-1350 (2 Cr.)		
PST-1411 (2 Cr.)	Equipment Operation & Safety	PST-1410 (3 Cr.)		
PST-1431 (2 Cr.)	Graphics for Landscape Design	PST-1430 (3 Cr.)		
PST-1441 (3 Cr.)	Intro to Landscape Design	PST-1440 (3 Cr.)		
PST-1500 (3 Cr.) & PST-2200 (3 Cr.)	Basic Landscape Contracting & Advanced Landscape Contracting	PST-2350 (3 Cr.)		
PTAT-1311 (2 Cr.) & HTEC-1000 (1 Cr.)	Fundamentals of Physical Therapy & Introduction to Patient Care	PTAT-1310 (3 Cr.)		
PTAT-1401 (2 Cr.)	Clinical Pathophysiology	PTAT-1400 (3 Cr.)		
PTAT-1411 (3 Cr.)	Physical Therapy Procedures	PTAT-1410 (5 Cr.)		
PTAT-2301 (4 Cr.)	Long-Term Physical Therapy Rehabilitation Procedures	PTAT-2300 (3 Cr.) & PTAT-2320 (3 Cr.)		
PTAT-2341 (2 Cr.)	Psychosocial Issues in Physical Therapy	PTAT-2340 (1 Cr.)		
PTAT-2840 (2 Cr.) & PTAT-2850 (2 Cr.)	Clinical Practicum I & Clinical Practicum II	PTAT-2950 (3 Cr.)		
RADT-1911 (7 Cr.)	Clinical Radiography I	RADT-1910 (7 Cr.)		
RADT-2361 (2 Cr.)	Interventional Radiography and Pharmacology	RADT-2360 (2 Cr.)		
RADT-2911 (7 Cr.)	Clinical Radiography II	RADT-2910 (7 Cr.)		
RADT-2921 (5 Cr.)	Clinical Radiography III	RADT-2920 (5 Cr.)		
RAT-1511 (2 Cr.)	Recording Lab I	RAT-1510 (3 Cr.)		
RAT-2311 (2 Cr.)	Recording Lab II	RAT-2310 (3 Cr.)		
RAT-2341 (2 Cr.)	Location Recording	RAT-2340 (3 Cr.)		
RESP-1421 (2 Cr.) & RESP-142L (1 Cr.)	Intermediate Polysomnography I & Intermediate Polysomnography I Lab	RESP-1420 (3 Cr.)		
RESP-2341 (1 Cr.)	Patient Management Problems	RESP-2340 (2 Cr.)		
SOC-2020 (3 Cr.)	Sociology of the Family	SOC-1210 (3 Cr.)		
SOC-2051 (3 Cr.)	Introduction to Social Welfare	SOC-2050 (3 Cr.)		
SPAN-1011 (4 Cr.)	Beginning Spanish Language and Cultures I	SPAN-1010 (4 Cr.)		
SPAN-1021 (4 Cr.)	Beginning Spanish Language and Cultures II	SPAN-1020 (4 Cr.)		

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
SPAN-2411 (3 Cr.)	Spanish Conversation and Composition	SPAN-2410 (3 Cr.)		
SPCH-2020 (3 Cr.)	Interviewing	SPCH-2030 (3 Cr.)		
SURT-1700 (4 Cr.)	Sterile Processing Technology I	MA-1700 (4 Cr.)		
SURT-1710 (4 Cr.)	Sterile Processing Technology II	MA-1710 (4 Cr.)		
SURT-1861 (2 Cr.)	Clinical Experience: Sterile Processing	SURT-1860 (2 Cr.)	MA-1860 (2 Cr.)	
SURT-1911 (3 Cr.)	Clinical Experience I	SURT-1910 (4 Cr.)		
SURT-1921 (3 Cr.)	Clinical Experience II	SURT-1920 (4 Cr.)		
SURT-2851 (3 Cr.)	Clinical Experience III	SURT-2850 (3 Cr.)		
SURT-2862 (4 Cr.)	Clinical Experience IV	SURT-2861 (4 Cr.)		
THEA-2210 (3 Cr.)	History of Theatre and Drama I	THEA-1210 (3 Cr.)		
THEA-2220 (3 Cr.)	History of Theatre and Drama II	THEA-1220 (3 Cr.)		
VC&D-1000 (3 Cr.)	Visual Communication Foundation	CART-1050 (2 Cr.)	VC&D-1100 (2 Cr.)	VC&D-1110 (2 Cr.)
VC&D-1015 (3 Cr.)	Digital Studio Basics	CART-1020 (1 Cr.)	GCMT-1020 (1 Cr.)	VC&D-1010 (1 Cr.) or VCDP-1060 (2 Cr.)
VC&D 1200 (3 Cr.)	Typography & Layout	CART-1300 (2 Cr.)		
VC&D-1061 (3 Cr.)	History and Trends in Visual Communication and Design	CART-1060 (3 Cr.)	VC&D-1060 (3 Cr.)	
VC&D-1430 (3 Cr.)	2D Design	CART-1310 (1 Cr.) & CART-131L (1 Cr.) & CART-1600 (1 Cr.) & CART-160L (1 Cr.)	VC&D-1300 (1 Cr.) & VC&D-130L (1 Cr.) & VC&D-1400 (1 Cr.) & VC&D-140L (1 Cr.)	VCDP-1360 (2 Cr.)
VC&D-2301 (3 Cr.)	Graphic Design and Illustration	CART-2310 (2 Cr.)	VC&D-2300 (2 Cr.)	
VC&D-2401 (3 Cr.)	Designing for Production	CART-2320 (2 Cr.)	VC&D-2400 (2 Cr.)	
VC&D-2530 (3 Cr.)	Professional Practices in VC&D	GCMT-2530 (3 Cr.)		
VC&D-2541 (3 Cr.)	Individual Projects	GCMT-2540 (2 Cr.)	VC&D-2540 (2 Cr.)	
VC&D-2600 (2 Cr.)	Graphic Production	CART-2330 (2 Cr.)		
VC&D-2701 (3 Cr.)	Media Design	CART-2450 (2 Cr.)	VC&D-2700 (2 Cr.)	
VC&D-2991 (3 Cr.)	Portfolio Preparation	CART-2700 (2 Cr.)	GCMT-2510 (2 Cr.)	VC&D-2990 (2 Cr.)
VCAD-2520 (3 Cr.)	Creative Advertising Campaign	CART-2500 (2 Cr.)		
VCAD-2621 (3 Cr.)	Advertising Studio I	VCAD-2620 (2 Cr.)		
VCAD-2721 (3 Cr.)	Advertising Studio II	VCAD-2720 (2 Cr.)		
VCDV-1180 (3 Cr.)	Intro to Digital Video & Digital Filmmaking	GCMT-2700 (3 Cr.)	VCIM-2170 (3 Cr.)	
VCGD-1500 (3 Cr.)	Advertising and Design	CART-1500 (2 Cr.)	VC&D-1500 (3 Cr.)	
VCGD-2131 (3 Cr.)	Magazine Design	CART-2430 (2 Cr.)	VCGD-2130 (2 Cr.)	

Appendix V: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
VCGD-2231 (3 Cr.)	Publication Design	CART-2420 (2 Cr.)	VCGD-2230 (2 Cr.) & VC&D-2200 (2 Cr.)	
VCGD-2331 (3 Cr.)	Brand Identity Design	CART-2410 (2 Cr.)	VCGD-2330 (2 Cr.)	
VCGD-2431 (3 Cr.)	Package Design	CART-2440 (2 Cr.)	VCGD-2430 (2 Cr.)	
VCIL-1141 (3 Cr.)	Rendering Techniques	CART-1340 (2 Cr.)	VCIL-1140 (2 Cr.)	
VCIL-2641 (3 Cr.)	Illustration Studio I	VCIL-2640 (2 Cr.)		
VCIL-2741 (3 Cr.)	Illustration Studio II	VCIL-2740 (2 Cr.)		
VCIM-1570 (3 Cr.)	Web Publishing I: HTML	GCMT-2471 (3 Cr.)	GCMT-2470 (3 Cr.)	
VCIM-1770 (3 Cr.)	Web Publishing II: Site Theory and Construction	VCIM-1670 (2 Cr.)		
VCIM-2071 (3 Cr.)	Service Learning Web and Interactive Media Studio	VCIM-2070 (3 Cr.)	GCMT-2480 (3 Cr.)	
VCIM-2270 (3 Cr.)	Animation for Web and Media	GCMT-2490 (3 Cr.)		
VCIM-2290 (3 Cr.)	Web Publishing IV: data Driven Sites	VCIM-2070 (3 Cr.)	GCMT-2480 (3 Cr.)	
VCIM-2371 (3 Cr.)	Interactive Media I	GCMT-2711 (3 Cr.)	VCIM-2370 (3 Cr.)	
VCIM-2470 (2 Cr.)	Virtual Reality Imaging	GCMT-1610 (2 Cr.)		
VCIM-2571 (3 Cr.)	Interactive Media Studio	VCIM-2570 (3 Cr.)		
VCPH-1050 (3 Cr.)	Black and White Photography	GCMT-1500 (3 Cr.)		
VCPH-1150 (3 Cr.)	History of Photography	GCMT-1540 (3 Cr.)		
VCPH-1261 (3 Cr.)	Photography I	VCPH-1260 (3 Cr.)		
VCPH-1450 (3 Cr.)	Digital Imaging I	GCMT-1600 (3 Cr.)		
VCPH-2050 (3 Cr.)	Commercial Studio Techniques I	GCMT-2500 (3 Cr.)		
VCPH-2450 (3 Cr.)	Digital Imaging II	GCMT-2600 (3 Cr.)		
VCPH-2541 (3 Cr.)	Individual Projects - Photography	VCPH-2540 (2 Cr.)		
VCPH-2550 (3 Cr.)	Commercial Studio Techniques II	GCMT-2560 (3 Cr.)		
VCPH-2260 (3 Cr.)	Photography II	VCPH-1350 (3 Cr.)	VCPH-2000 (3 Cr.)	GCMT-1520 (3 Cr.)
VCPH-2660 (3 Cr.)	Photography III	VCPH-2350 (3 Cr.) & VCPH-2650 (3 Cr.)		
VCPH-2760 (3 Cr.)	Editorial Photography	VCPH-2150 (3 Cr.)		
VT-1100 (1 Cr.) & VT-1200 (1 Cr.)	Veterinary Medical Terminology & Veterinary Law and Ethics	VT-1300 (2 Cr.)		
VT-1451 (2 Cr.)	Veterinary Diagnostic Imaging	VT-1450 (2 Cr.)		

CROSS-LISTED COURSES

Cross-listed courses are identical courses offered in two or more subject areas. They may differ in subject area code and course number. Credit may be earned once for cross-listed courses. If a course is cross-listed with another course that fills a general education or program requirement, either course meets the requirement.

<u>CROSS-LISTED COURSE</u>		<u>CR.</u>	<u>EQUIVALENT COURSE</u>		<u>CR.</u>
ACCT-2990	Business Strategies	3	BADM-2501	Business Strategies	3
ART-2151	Animation for Web and Media	3	VCIM-2270	Animation for Web and Media	3
BIO-1300	Horticultural Botany	3	PST-1300	Horticultural Botany	3
ENG-2050	Introduction to Personal and Reflective Writing	3	WST-2050	Introduction to Personal and Reflective Writing	3
HLTH-1310	Cardiopulmonary Resuscitation	1	EMT-1310	Cardiopulmonary Resuscitation	1
PSCI-1010	Astronomy	3	PHYS-1010	Astronomy	3
PSCI-101L	Astronomy Laboratory	1	PHYS-101L	Astronomy Laboratory	1
PSCI-1020	Chemistry	3	CHEM-1000	Everyday Chemistry	3
PSCI-102L	Chemistry laboratory	1	CHEM-100L	Everyday Chemistry Laboratory	1
PSCI-1030	Earth	3	ESCI-1030	Earth	3
PSCI-103L	Earth Laboratory	1	ESCI-103L	Earth Laboratory	1
POL-2120	Women and Politics	3	WST-2120	Women and Politics	3
WST-2020	Women, Science and Technology	3	HIST-2020	Women, Science and Technology	3

STANDARD AND HONORS COURSES

STANDARD COURSE		CR.	EQUIVALENT HONORS COURSE		CR.
BADM-2010	Business Communications	3	BADM-201H	Honors Business Communications	3
BIO-1500	Principles of Biology I	4	BIO-150H	Honors Principles of Biology I	4
BIO-1510	Principles of Biology II	4	BIO-151H	Honors Principles of Biology II	4
CHEM-1010	Introduction to Inorganic Chemistry	4	CHEM-101H	Honors Introduction to Inorganic Chemistry	4
CHEM-1020	Introduction to Organic and Biochemistry	4	CHEM-102H	Honors Introduction to Organic and Biochemistry	4
CHEM-1300 & CHEM-130L	General Chemistry I & General Chemistry Laboratory I	4 & 1	CHEM-130H	Honors General Chemistry I	5
CHEM-1310 & CHEM-131L	General Chemistry II & General Chemistry II Laboratory	4 & 1	CHEM-131H	Honors General Chemistry II	5
ESCI-1410	Physical Geology	3	ESCI-141H	Honors Physical Geology	3
ENG-1010	College Composition I	3	ENG-101H	Honors College Composition I	3
ENG-1020	College Composition II	3	ENG-102H	Honors College Composition II	3
HIST-1010	History of Civilization I	3	HIST-101H	Honors History of Civilization I	3
HIST-1020	History of Civilization II	3	HIST-102H	Honors History of Civilization II	
HIST-1510	United States History to 1877	3	HIST-151H	Honors United States History to 1877	3
HIST-1520	United States History Since 1877	3	HIST-152H	Honors United States History Since 1877	3
	None		HUM-175H	Honors Forum: Critical Issues	3
IT-1010	Introduction to Microcomputer Applications	3	IT-101H	Honors Introduction to Microcomputer Applications	3
MATH-1510	Trigonometry	4	MATH-151H	Honors Trigonometry	4
MATH-1521	College Algebra	4	MATH-152H	Honors College Algebra	4
MATH-1610	Calculus I	5	MATH-161H	Honors Calculus I	5
MATH-1620	Calculus II	5	MATH-162H	Honors Calculus II	5
MATH-2310	Calculus III	4	MATH-231H	Honors Calculus III	4
PHIL-1010	Introduction to Philosophy	3	PHIL-101H	Honors Introduction to Philosophy	3
PHIL-2020	Ethics	3	PHIL-202H	Honors Ethics	3
PHIL-2050	Bioethics	3	PHIL-205H	Honors Bioethics	3
POL-1010	American National Government	3	POL-101H	Honors American National Government	3
PSY-1010	General Psychology	3	PSY-101H	Honors General Psychology	3
PSY-2010	Child Growth and Development		PSY-201H	Honors Child Growth and Development	
PSY-2020	Life Span Development	4	PSY-202H	Honors Life Span Development	4
SPCH-1010	Fundamentals of Speech Communication	3	SPCH-101H	Fundamentals of Speech Communication	3
SOC-1010	Introductory Sociology	3	SOC-101H	Honors Introductory Sociology	3
SOC-2010	Social Problems	3	SOC-201H	Honors Social Problems	3
	None		WST-200H	Honors Women and Reform	3

Appendix V: Equivalent Courses

DELETED COURSES WITH NO EQUIVALENCY

The following courses have been deleted from the College course inventory and no replacements have been indicated. If you are required to take one of these courses to meet your degree requirements, please see the faculty coordinator or program manager in that department to discuss your options.

DELETED COURSE WITH NO EQUIVALENCY		CR.
ANTH-1020	Physical Anthropology	3
AUTO-1200	Introduction to Automotive Service Manuals and Information Systems	1
AUTO-130A	Automotive Engines Principles	1
AUTO-130B	Automotive Engines: Laboratory Competencies	1
AUTO-130C	Automotive Engines: Advanced Laboratory Competencies	1
AUTO-135A	Manual Transmission and Drivetrain: Principles	1
AUTO-135B	Manual Transmission and Drivetrain: Laboratory Competencies	1
AUTO-140A	Automotive Alignment, Steering, and Suspension: Principles	1
AUTO-140B	Automotive Alignment, Steering, and Suspension: Laboratory Competencies	1
AUTO-145A	Automotive Braking Systems: Principles	1
AUTO-145B	Automotive Braking Systems: Advanced Principles	1
AUTO-145C	Automotive Braking Systems: Laboratory Competencies	1
AUTO-150A	Automotive Electrical Fundamentals: Principles	1
AUTO-150B	Automotive Electrical Fundamentals: Laboratory Competencies	1
AUTO-230A	Automatic Transmissions: Principles	1
AUTO-230B	Automatic Transmissions: Laboratory Competencies	1
AUTO-235A	Automotive HVAC: Principles	1
AUTO-235B	Automotive HVAC: Laboratory Competencies	1
AUTO-240A	Engine Performance: Principles	1
AUTO-240B	Engine Performance: Laboratory Competencies	1
AUTO-240C	Engine Performance: Advanced Laboratory Competencies	1
AUTO-245A	Automotive Electronic Engine Controls	1
AUTO-245B	Automotive Electronic Engine Controls: Laboratory Competencies	1
AUTO-245C	Automotive Electronic Engine Controls: Advanced Laboratory Competencies	1
AUTO-247A	Automotive Electrical Systems: Principles	1
AUTO-247B	Automotive Electrical Systems: Laboratory Competencies	1
AUTO-250A	Automotive Electrical Diagnosis: Principles	1
AUTO-250B	Automotive Electrical Diagnosis: Laboratory Competencies	1
BADM-2230	Value Analysis	3
BADM-2420	CPS Review: Management, Finance and Business Law	3
DIET-1150	Nutrition for Children and Families	2
DIET-1340	Health Food Exploration	2
ECED-101A	Children's Development and Types of Programs in Early Childhood	1
ECED-101B	Theoretical Foundations of Early Childhood	1
ECED-101C	Curriculum and Inclusion in Early Childhood	1
ECED-101D	Early Childhood Curriculum in the Classroom	1
ECED-1600	Beginning Writing and Reading	3

DELETED COURSE WITH NO EQUIVALENCY		CR.
ECED-2610	Language, Literacy and Print-Sound Code	3
ECED-2620	Assessment in Early Literacy	3
ECED-2630	Mentoring in Early Literacy	3
EET-1060	PC Networking	2
EET-2250	Industrial Electronics II	3
EET-2130	Telecommunications II	3
EET-2230	Telecommunications III	3
EET-2590	Telecommunications Design Project	2
EHST-2310	CERCLA Superfund Sites	2
FIN-1110	Principles of Finance	2
DMS-2370	Advanced Sonographic Physical Principles and Flows	3
DMS-2921	Directed Practice III	3
JMC-1020	Introduction to Mass Communications II	3
GCMT-1001	Orientation to Publishing Industries	2
GCMT-1010	Orientation to Publishing Laboratory	1
GCMT-1220	Digital Output Systems I	2
GCMT-1230	Digital Output Systems II	2
GCMT-1250	Variable Data Document Creation and Printing	2
GCMT-1340	Imaging Science	2
GCMT-1350	Image Reproduction and Film Assembly	2
GCMT-1410	Integrating Production and Design for Graphic Products	3
GCMT-2300	Print Production Materials	2
GCMT-2311	Substrate Imaging and Finishing	4
GCMT-2320	Offset Printing	2
GCMT-2340	Imposition, Layout, Bindery and Finishing	3
GCMT-2350	Printing Production and Operations Management	2
GCMT-2360	Customer Service and Sales Support	2
GCMT-2370	Printing Estimating	2
GCMT-2840	Internship	1-3
GEN-1050	Organizing Your Employment Campaign	2
HIM-2420	Trends in Health Information Management	2
HS-1010	Community Care Coordinator I	2
HS-1020	Community Care Coordinator II	2
HS-1030	Community Care Coordinator III	2
HS-1230	Chemical Dependency Diagnosis	3
ITMF-1310	Internal Computer Functions	2
ITMF-1500	Application Program Development I: COBOL	5
ITMF-2530	Application Program Development II: COBOL	5
ITMF-2550	Application Program Development III: COBOL, CICS, SQL	5
ITMF-2610	Assembly Language Programming	4
ITMP-1060	Introduction to Programming Concepts	3
IITMP-2630	Advanced Visual Basic Programming	4
ITNT-2340	Netware Administration I	3

Appendix V: Equivalent Courses

DELETED COURSE WITH NO EQUIVALENCY		CR.
ITNT-2440	Netware Administration II	3
ITWM-2990	E-Commerce Technologies	3
LAW-2430	Contemporary Security Problems	3
LAW-2520	Criminology	3
MARK-2990	Marketing Case Analysis	1
MATH-1050	Mathematics for Technology	3
MATH-1180	Intermediate Algebra for Technologies	4
MET-2020	Geometric Dimensioning and Tolerancing	2
MIT-2030	Industrial Drawing Essentials	3
MIT-2150	Motion and Time Study	3
MIT-2120	Facilities Design and Material Handling	3
MIT-2220	Advanced AutoCAD	3
MLT-1350	Problem Solving Techniques for the Medical Laboratory	1
MLT-1460	Hematology I	3
MLT-1470	Blood Bank and Serology I	3
MLT-1480	Clinical Microbiology I	3
MLT-1500	Clinical Chemistry I	3
MLT-2460	Hematology II	2
MLT-2470	Blood Bank and Serology II	2
MLT-2481	Clinical Microbiology II	2
MLT-2500	Clinical Chemistry II	3
MLT-2850	Medical Laboratory Practicum II	2
NMED-1600	Radiopharmacy and Chemistry for Nuclear Medicine	4
NMED-1700	Nuclear Medicine Instrumentation	4
PNUR-1310	Fundamentals of Nursing	4
PNUR-1320	Nursing Management of Adults I	4
PNUR-1340	Nursing Care of Families	4
REAL-1301	Principles and Practices of Real Estate	3
REAL-1321	Diversity Awareness and Fair Lending	3
REAL-1331	Loan Origination	3
REAL-1401	Real Estate Law	3
REAL-1501	Valuation of Residential Properties	1
REAL-1601	Real Estate Finance	1
REAL-2300	Real Estate Brokerage	2
REAL-2310	Loan Processing	2
REAL-2330	Loan Underwriting	2
REAL-2340	Mortgage Loan Servicing	2
REAL-2360	Community Development in Mortgage Lending	3
REAL-2400	Real Estate Sales	2
REAL-2500	Commercial and Industrial Real Estate	2
REAL-2600	Real Estate Management	2
REAL-2700	Valuation of Income Properties	2
REAL-2940	Mortgage Finance Field Experience	1-2

DELETED COURSE WITH NO EQUIVALENCY		CR.
RESP-1410	Beginning Polysomnography	2
RESP-1421	Intermediate Polysomnography I	2
RESP-142L	Intermediate Polysomnography II	1
RESP-1430	Intermediate Polysomnography II	3
RESP-1440	Neurophysiology of Sleep	3
RESP-1934	Directed Practice I	3
RESP-2934	Directed Practice II	3
SSCI-1030	Introduction to Social Science	3
SSCI-1040	Introduction to Social Science II	3
VCDP-1160	Troubleshooting Computer Publishing Systems	2
VCDP-1260	Digital Page Layout	2
VCDP-2260	Color Scanning and Reproduction	2
VCDP-2360	Digital Production and Layout	3
VCDP-2760	Estimating and Production Management	3
VCIL-1440	Surface Design	2
VCIL-2140	Illustration with Prismacolor	2
VCIL-2240	Illustration in Pen and Ink	2
VCIL-2340	Illustration with Watercolor	2
VCSI-1020	Practices and Procedures in Scientific Imaging	3
VCSI-1350	Basic Photography for Scientific Imaging	3
VCSI-1450	Scientific Imaging I	3
VCSI-2020	Scientific Imaging II	3
VCSI-2450	Image Analysis	3
VCSI-2530	Professional Ethics and Scientific Imaging Practice	3
VCSI-2990	Scientific Imaging III	3

APPENDIX VI

Employees

EXECUTIVE OFFICERS

College President & Executive Vice Presidents

JOHNSON, ALEX
President
B.A., Winston-Salem State University
M.A., Lehman College
Ph.D., Pennsylvania State University

FOLTIN, CRAIG
Executive Vice President/Treasurer Administration & Finance
B.S., The Ohio State University
M.B.A., Cleveland State University
D.B.A., Cleveland State University

GARY, SR., WILLIAM H.
Executive Vice President, Workforce & Economic Development Division
B.A., Morehouse College
M.A., Rutgers University

MILES, BELINDA S.
Executive Vice President and Provost, Access, Learning & Success
B.A., City University of New York
M.A., Columbia University
Ed.D., Columbia University

PETERSON, ROBERT
President & Chief Executive Officer Corporate College
B.S., John Carroll University
J.D., Cleveland Marshall College of Law

McNAIR, RONNA
Chief of Staff, Executive Assistant to the President
B.S., University of Akron
M.B.A., Wayne State University

Campus Presidents

LISS, RON
Campus President
Vice President, Western Campus
B.S., University College New York
M.A., University of Maryland
Ph.D., American University Washington, D.C.

POPE, TERRI
Campus President
Vice President, Westshore Campus
A.A.S., Cuyahoga Community College
B.S., Case Western Reserve University
Ph.D., The Ohio State University

SCHOOP, MICHAEL
Campus President
Vice President, Metropolitan Campus
B.A., University of Chicago
M.A., University of Maryland, College Park
Ph.D., University of Maryland, College Park

THOMSON, J. MICHAEL
Campus President
Vice President, Eastern Campus
B.A., Pennsylvania State University
M.A., University of Kentucky
Ph.D., University of Kentucky

Vice Presidents

ABOUSERHAL, MIKE
Vice President, Finance & Business Services
B.B.A., Cleveland State University

BANKEY, MICHAEL
Vice President, Technical Programs
B.A., University of Findlay
M.A., Bowling Green State University
M.A., University of Dayton
Ph.D., Touro University

BOOKER, ALICIA
Vice President, Operations & Manufacturing
B.A., DePaul University
M.S., Central Michigan University

HARRIS, CLAYTON
Vice President, Public Safety & Security
B.A., Ohio University

HOOVLER, DAVID
Vice President, Integrated Communications
B.A., Asbury University
M.A., Wheaton College

HOVRIGAN, GERARD
Vice President, Chief Information Officer
B.A., Madonna University
M.S., Central Michigan University

MAC EWAN, PETER
Vice President, Facilities Development & Operations
B.S.C.E., University of Toledo
M.S.C.E., Stanford University

McMULLEN, JUDITH
Vice President, Chief Human Resources Officer
B.A., Baldwin Wallace College
M.B.A., Ashland University

MILLER, KAREN
Vice President, Access & Completion
B.S., University of Akron
M.S., University of Akron

MOOSMANN, GLORIA
Vice President, Development Office
A.A.B., Cuyahoga Community College
B.A., Cleveland State University

REID, PATRICIA
Vice President, Health Care Education Initiatives
B.S., Kent State University
M.S., University of Kentucky

RICHARD, RENEE
Vice President, General Counsel & Legal Services
B.A., Kent State University
M.B.A., Cleveland State University
J.D., Cleveland-Marshall College of Law

ROSACCO, CLAIRE
Vice President, Government Affairs & Community Outreach
B.A., The Ohio State University

SPIELVOGEL, JENNIFER A.
Vice President, Evidence & Inquiry
B.S.Ed., Bowling Green State Univ.
M.A., Bowling Green State University
Ph.D., University of Michigan

WILLIAMS, LISA
Vice President, Learning & Engagement
B.S., University of Akron
M.S., University of Akron

WOODARD, LINDA
Vice President, Workforce and Economic Development Division
B.S., University of Akron
M.B.A., Indiana Wesleyan University

Associate Vice Presidents

BENTLEY, KELVIN
Assoc. Vice President, eLearning & Innovation
B.A., Wayne University
M.A., University of Delaware
Ph.D., University of Delaware

MARSHALL, JaNICE
Assoc. Vice President, Access & Community Engagement
 B.S., Michigan State University
 M.S., Michigan State University
 Ph.D., University of Texas at Austin

EXECUTIVE DIRECTORS

ABDOLLAHIAN, HAMID
Executive Director, CISCO
 M.S.A., Roosevelt University
 M.B.A., Roosevelt University

BILOKONSKY, GEORGE
Executive Director, Technology Academies
 B.A., The Ohio State University
 B.S., The Ohio State University
 M.A., Cleveland State University

BOARD, CRISTINE
Executive Director, Human Resource Operations & Employee Services
 A.A., Lorain Community College
 B.B.A., Baldwin Wallace College
 M.S., Cleveland State University

BOSWORTH, BLAIR
Executive Director, Plant Operations
 B.S.M.E., Cleveland State University
 M.B.A., Lake Erie College

BRYAN, ROBERT W.
Executive Director, Media Engineering
 A.A.S., Cuyahoga Community College
 B.S., Bellevue University

DeCHANT, RICHARD
Executive Director, Veteran Services & Programs
 B.A., John Carroll University

DOLINAR, JOHN
Executive Director, Enterprise Infrastructure Services
 B.S., Western Governors University
 M.S., Western Governors University

EVANS, BRANDT
Executive Director/General Manager, Hospitality Management
 A.S.C.C., Culinary Institute of America

GERMAN, ERIC
Executive Director, Sales & Business Development
 B.S., University of Baltimore

GROSS, JOSEPH
Executive Director, Workforce and Economic Development Division
 B.B.A., Kent State University
 M.B.A., Baldwin-Wallace College

GROVER, NOREEN
Executive Director, Development Office
 B.A., Marquette University

HALE, KENNETH
Executive Director, College Pathway Programs

B.A., Bowling Green State University
 M.Ed., Cleveland State University

JOHNSON, ANGELA
Executive Director, Enrollment Operations
 B.A., The Ohio State University
 M.A., American University

JOHNSON, MICHAEL
Executive Director, Accounting
 A.S., Jamestown Community College
 B.S., University of Pittsburgh
 M.B.A., Otterbein College

LANDINI, MICHAEL
Executive Director, Development
 B.A., George Washington University

LEITSON, CYNTHIA
Executive Director, Supplier Managed Services
 B.A., Michigan State University

LUDWA, CHRIS
Executive Director, Performing Arts & Music Production
 B.A., Indiana University
 M.A., Indiana University

MAGGS, JILL
Executive Director, Success & Completion
 B.A., University of New Mexico
 M.A., Royal Holloway (England)
 Ph.D., Institute of Education, University of London

McDADE, KATE
Executive Director, Development Office
 B.S., Miami University

McKNIGHT, SANDRA
Executive Director, Access, Learning & Success
 B.S.B.A., Bowling Green State University
 M.B.A., Cleveland State University

MOIR, CHRIS ALAN
Executive Director, College Hospitality Services & Retail Operations
 B.A., Kent State University

MORGANTI, NORMA
Executive Director, College HIT Consortium
 A.A., Lakeland Community College
 B.S., Miami University

PAOLETTA, TONI
Executive Director, Information Technology Training
 A.A., Cuyahoga Community College
 B.A., Tiffin University
 M.Ed., Cleveland State University

RICHARDS, MARVIN
Executive Director, Business Continuity
 B.S.B.A., University of Illinois
 M.A., Governors State University
 J.D., University of Illinois College of Law

ROBINSON, TERRY
Executive Director, Continuing & Community Education
 B.A., Illinois State University
 M.B.A., University of Illinois

ROYKO, BARRY
Executive Director, Organizational Development
 A.A., Lakeland Community College
 B.A., Cleveland State University
 M.A., Gonzaga University

STECKY, THOMAS
Executive Director, Facilities Development & Operations
 B.A., Case Western Reserve University

STEWART, STANDISH
Executive Director, Enterprise Application Services
 B.S., Case Western Reserve University
 M.S., University of Michigan
 M.B.A., Cleveland State University

WELCH, LILLIAN
Executive Director, Total Rewards
 B.A., University of Akron

WHEATON, JODY
Executive Director, Client Solutions & Program Management
 B.S., Bowling Green State
 M.S., Radford University

DEANS/ASSOCIATE

DEANS

COLLEGE-WIDE.....

COX, G. PAUL
Dean, Creative Arts
 B.Mus., Oberlin Conservatory of Music
 M.M., Case Western Reserve University
 Ph.D., Case Western Reserve University

Appendix VI: Employees

MEYER, IRENE

Assoc. Dean, Nursing

B.S.N., Gwynedd Mercy College

M.S.N., University of Maryland

PARKS, AMY

Assoc. Dean, Creative Arts

B.M., University of Delaware

M.M., Peabody Conservatory John Hopkins University

TENBERGEN, KLAUS

Assoc. Dean, Hospitality Management

B.A., Kendall College

M.A., Erste Deutsche Backerfachschule, Olpe, Germany

M.S.M., Cardinal Stritch University

Ed.D., California State University

WONG, LAM

Assoc. Dean, Engineering

A.A., New York City Community College

B.S., Columbia University

M.S., National Technological University

M.S., University of Rochester

YATES, VIVIAN

Dean, Nursing

A.S., Lorain Community College

B.S.N., University of Akron

M.S.N., Kent State University

Ph.D., University of Akron

EASTERN CAMPUS.....

CUNION, WILLIAM

Assoc. Dean, Liberal Arts

B.A., Xavier University

M.A., Ohio University

Ph.D., University of Illinois

HARTLEY, LORRAINE P.

Assoc. Dean, Business, Math & Technology

B.A., California University of Pennsylvania

M.S., California University of Pennsylvania

D.B.A., Nova Southeastern University

MARR JR., JOHN

Dean, Learning & Engagement

B.A., Wittenberg University

M.S., Wright State University

Ph.D., The Ohio State University

MAY, MEL ANTHONY

Dean, Access & Completion

B.G.S., Kent State University

M.Ed., Kent State University

Ph.D., Kent State University

DIONISI, LISA

Assoc. Dean, Health Careers & Sciences

B.S., Lake Superior State University

M.S., Rosalind Franklin University of Medicine and Science

METROPOLITAN CAMPUS.....

ELLISON, PAMELA N.

Assoc. Dean, Business, Math & Technology

B.S., Dyke College

M. Ed., Kent State University

Ph.D., Kent State University

ENGLISH, LINDSAY

Dean, Learning & Engagement

B.S., The Ohio State University

M.B.A., Kent State University

LADNER-MATHIS, JOCELYN

Assoc. Dean, Liberal Arts

B.A., Mundelein College

M.S., Western Illinois University

Ph.D., Illinois State University

MCCORY, DENISE

Dean, Access & Completion

B.A., Ohio University

M.A., Cleveland State University

MIKUSZEWSKI, BARBARA

Assoc. Dean, Health Careers & Sciences

B.S., Plattsburg State University of N.Y.

M.S., University of Massachusetts

WESTERN CAMPUS.....

BOBER, DELIA

Assoc. Dean, Liberal Arts

B.A., Ohio University

M.A., Ohio University

BROOKS, KIM

Assoc. Dean, Mathematics

B.S., Michigan State University

M.S., University of Toledo

DEL ROSARIO, DIANA

Dean, Access & Completion

B.A., University of Puerto Rico

M.B.A., Baldwin Wallace College

FRAZEE, DAVID R.

Assoc. Dean, Health Careers & Sciences

B.S., University of Alabama

Birmingham

M.S., University of Cincinnati

HALM, SCOTT

Assoc. Dean, Business & Information

Technology

B.A., Wittenburg University

M.B.A., University of Michigan

TAYLOR HEARD, JANICE

Dean, Learning & Engagement

B.A., Kent State University

M.A., Kent State University

Ph.D., University of Georgia

VACANT

Assoc. Dean, Social Sciences

WESTSHORE CAMPUS.....

PROUDFIT, ANN

Dean, Access & Completion

B.A., Washington and Jefferson College

M.S., The Ohio State University

Ph.D., University of Toledo

SEARSON, ROBERT

Dean, Learning & Engagement

B.A., John Carroll University

M.S., John Carroll University

ASSISTANT DEANS

COLLEGE-WIDE

MAUSSER, HERBERT

Asst. Dean, Honors & Experiential

Learning Programs

B.S., Case Western Reserve University

M.S., Case Western Reserve University

VACANT

Asst. Dean, Student Learning and Career

Development

EASTERN CAMPUS

ANDERSON, RACHEL

Asst. Dean, Access & Completion

B.A., Stanford University

M.A., Saint Mary's College of California

HANCOX, TERRY

Asst. Dean, Learning Commons

B.A., University of Northern Iowa

M.A., University of California,

Riverside

M.L.I.S., University of Michigan

KEENEY, DWAYNE

Asst. Dean, Learning & Engagement

B.S., Heidelberg College

M.A., Cleveland State University

METROPOLITAN CAMPUS

BRIGGS, TONYA

Asst. Dean, Learning Commons

B.A., Syracuse University

M.A., The Ohio State University

M.L.I.S., Kent State University

CRAWFORD, ANDREW
Asst. Dean, Access & Completion
 B.S., University of Central Florida
 M.Ed., Ohio University

DULL, CHARLES
Asst. Dean, eLearning & Innovation
 A.A., Kent State University
 B.A., Youngstown State University
 M.B.A., Youngstown State University
 Ph.D., Capella University

RICHARDSON, BELINDA
Asst. Dean, Learning & Engagement
 B.S., Ohio University
 M.A., University of Akron

WESTERN CAMPUS

COLLURA, MICHAEL
Asst. Dean, Learning Commons
 B.A., University of Akron
 M.Ed., University of Akron

EAFFORD, FELISA
Asst. Dean, Learning & Engagement
 B.A., Case Western Reserve University
 M.A., The Ohio State University

RUANE, JULIA
Asst. Dean, Access & Completion
 B.A., Cleveland State University
 M.B.A., Chaminade University

WESTSHORE CAMPUS.....

COX, ANDREW
Asst. Dean, Access & Completion
 B.A., Baldwin-Wallace College
 M.A., Cleveland State University

HUGHES, ROSE
Asst. Dean, Learning Commons
 B.A., Bethel College
 M.A., Regent University

VACANT
Asst. Dean, Learning & Engagement

FACULTY

A.

ABOU-DIAB, MALEK S.
Asst. Professor, Mathematics
 B.S., Cleveland State University
 M.S., Cleveland State University

ADAMS, MELANIE
Asst. Professor, Hospitality Management
 A.S., Johnson and Wales University
 B.S., Johnson and Wales University

AGBEMABIESE, PADMORE
Assoc. Professor, English
 B.A., University of Ghana
 M.A., The Ohio State University
 Ph.D., The Ohio State University

AIDARA, IDRISSE
Assoc. Professor, Math
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 B.S., Washington University
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 M.S., Case Western Reserve University
 M.S., Cleveland State University

B.

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 M.A., Western Reserve University
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 M.B.A., Baldwin Wallace College

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 B.S., Sri Padmavathi Women's
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 M.S., Southern Illinois University

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 B.S., The Ohio State University

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 Captioning*
 B.S., Empire State College
 M.Ed., Grand Canyon University

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 Sonography*
 A.A.S., Cuyahoga Community College
 B.S., St. Joseph College of Maine
 M.H.S., Nova Southeastern University

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 B.S., Ohio University
 M.S., University of Akron

BELLE, NATALIE J.
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 B.S., George Washington University
 M.D., Howard University

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 B.A., Oberlin College
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 B.S., Ohio University
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BERG, KEVIN
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 M.S., Bowling Green State University
 M.S., Cleveland State University

Appendix VI: Employees

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B.F.A., Calif. College of Arts & Crafts
M.F.A., Kent State University

BERNATOWICZ, DAVID

Assoc. Professor, History
B.A., Gannon University
M.A., Duquesne University

BIGGERS, KRISTINE

Asst. Professor, Nursing
B.S.N., Malone University
M.S.N., University of Akron

BISHOP, IRIS W.

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B.A., Case Western Reserve University
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BLACKMON, DOROTHY J.

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B.A., Baldwin-Wallace College
M.A., University of Akron
Ph.D., University of Akron

BLECH, DAVID

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M.S.N., Case Western Reserve University

BLOOR, CATHERINE

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A.A., Lorain Community College
B.S., Siena Heights University

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B.S., University of West Florida
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B.A., John Carroll University
B.S., John Carroll University
M.A., Miami University

BORDERS, ANDREA

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BOYD, BRIAN

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B.S., Kent State University
M.S., Lake Erie College

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B.S., University of Pittsburgh
M.S., University of Missouri, Kansas City

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M.A., University of Dayton
M.A., University of Dayton

DVORAK, CARRIN L.
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M.B.E., Robert Morris University
- GLATT, PAUL C.
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B.S., University of Arizona
M.M.H., Cornell University
- GOULANDRIS, KAREN
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B.S., Cleveland State University
M.Ed., Cleveland State University
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M.F.A., Miami University
- GREEN, TONI L.
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B.A., Ohio University
M.Ed., Ohio University
- GREENE, TRACY
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M.A., Cleveland State University
- GUBKIN, MICHAEL R.
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M.A., University of Iowa
M.F.A., University of Iowa
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B.S., Olivet Nazarene University
M.S., University of Akron
Ph.D., Cleveland State University,
Marshall College of Law
- H.**
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M.A., University of Kansas
M. Ed., University of Kansas
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M.F.A., University of Wisconsin-Madison
- HALL, C. JEAN MOSLEY
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Ph.D., Cleveland State University
- HAMPTON-PICKETT, MICHELE
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M.B.A., Northeastern University
Ph.D., Capella University
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B.S., Cleveland State University
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M.A., Ohio University
Ph.D., Ohio University
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B.A., Case Western Reserve University
M.A., University of Akron
Ph.D., University of Akron
- HARTZELL, WILLIAM
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B.S., Valparaiso University
M.M., New York University
- HAWKINS, CHRISTOPHER
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M.A., Cleveland State University
- HEIDENREICH, JAMES
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M.C.I.S., Cleveland State University
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B.A., University of Michigan
M.A., Cleveland State University

WINSTON, BARBARA A.
Asst. Professor, Counseling
B.A., Bowling Green State University
M.Ed., Cleveland State University

WOLKEN, CHRISTINE
Asst. Professor, Art
B.A., John Carroll University
M.A., John Carroll University
Ph.D., Case Western Reserve University

WONG, KY-WAI
Asst. Professor, Hospitality Management
B.S., University of California
Certification, Le Cordon Bleu

Y.

YATES-KONZEN, KIRSTEN
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B.A., University of Iowa
M.A., University of Cincinnati

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B.S., Cleveland State University
M.A., Cleveland State University

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Ph.D., Michigan State University

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M.A., John Carroll University

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A.A., Cuyahoga Community College

A.S., Cuyahoga Community College

B.S., University of Akron

M.S., University of Akron

M.Ed., University of Akron

Ed.D., Nova Southeastern University

ZATKO, FRANK*Asst. Professor, Biology*

B.S., Xavier University

Ph.D., Case Western Reserve University

ZELEZNIK, THERESA P.*Asst. Professor, English*

B.A., Cleveland State University

M.A., Cleveland State University

ZINNER, ELLIOTT*Assoc. Professor, Speech Communications*B.S., State University of New York
(Geneseo)

M.A., Ohio University

Ph.D., Case Western Reserve University

ZOLDESSY, BRIAN*Asst. Professor, Theatre Arts*

B.F.A., Long Island University

M.F.A., California State University

Appendix VII: Campus Maps and Directions

Eastern Campus

4250 Richmond Road
Highland Hills, OH 44122-6195

By automobile:

The Eastern Campus is bound by Harvard Road to the north, Emery Road to the south, Richmond Road to the east and Green Road to the west. Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office.

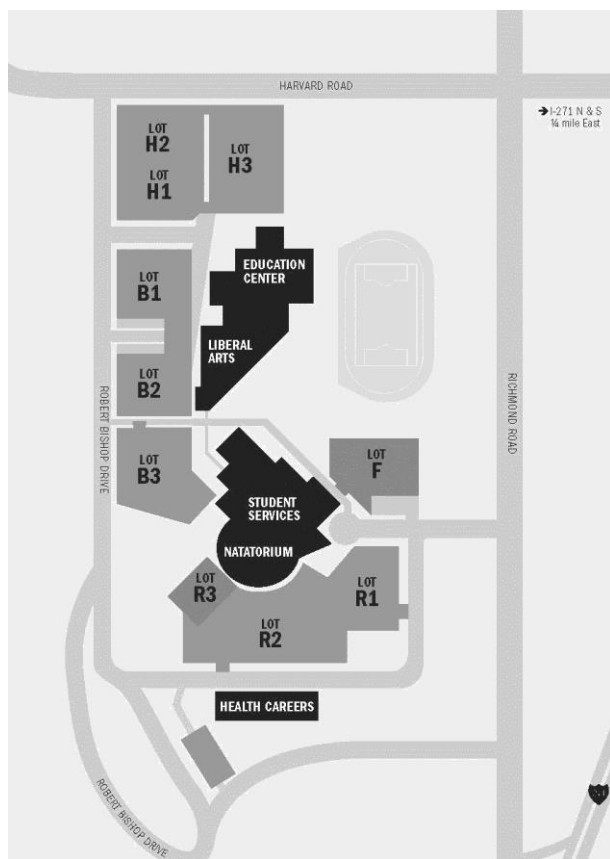
Motorists traveling south on I-271 should take the Harvard Road exit (Exit 28B). Turn right off the exit ramp and travel west on Harvard (about a quarter mile) to Richmond Road. Turn left on Richmond Road and travel south (about a quarter mile). The Eastern Campus entrance will appear on your right.

Motorists traveling north on I-271 should take the Harvard Road exit (Exit 28B). Turn left off the exit ramp and proceed (about a quarter mile) west on Harvard to Richmond Road. Turn left on Richmond and travel south to the Eastern Campus entrance (on your right).

Motorists traveling I-480 east should merge onto I-271 north (use local lanes) and then follow the directions above (north on I-271).

By bus:

Routes #15 Union-Harvard operates 7 days, early morning through late night. #94 E. 260th - Richmond operates M-F, early morning through evening. For the most up to date information, go to RideRTA.com and do on line trip planning or call the RTA Answerline at 216-621-9500.



Metropolitan Campus

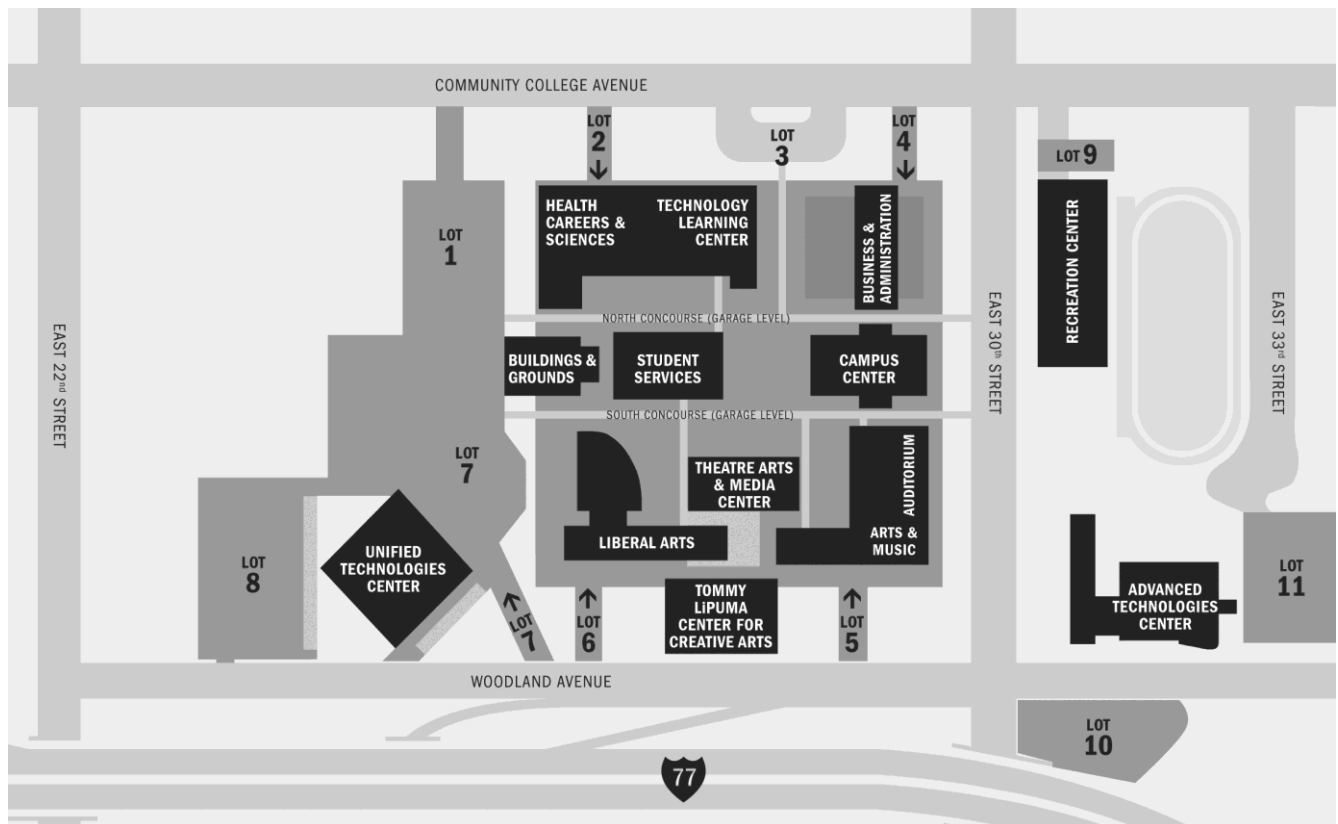
2900 Community College Avenue
Cleveland, OH 44115-3196

By automobile:

Motorists can reach the campus by traveling east or west via Euclid or Carnegie Ave. to East 30th Street and then south to the campus. From I-77 northbound take the Cuyahoga Community College exit (East 30th Street) onto Woodland Ave. From I-90 eastbound and I-71 northbound take the exit to I-77 south and immediately exit onto East 30th Street. Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office (Concourse 90, 216-987-4325).

By bus:

Routes #11 Quincy-Buckeye operates 7 days, early morning through late night. #14 Kinsman operates 24/7. #15 Union-Harvard operates early morning through late night. For the most up to date information, go to RideRTA.com and do on line trip planning or call the RTAanswerline at 216-621-9500.



Western Campus

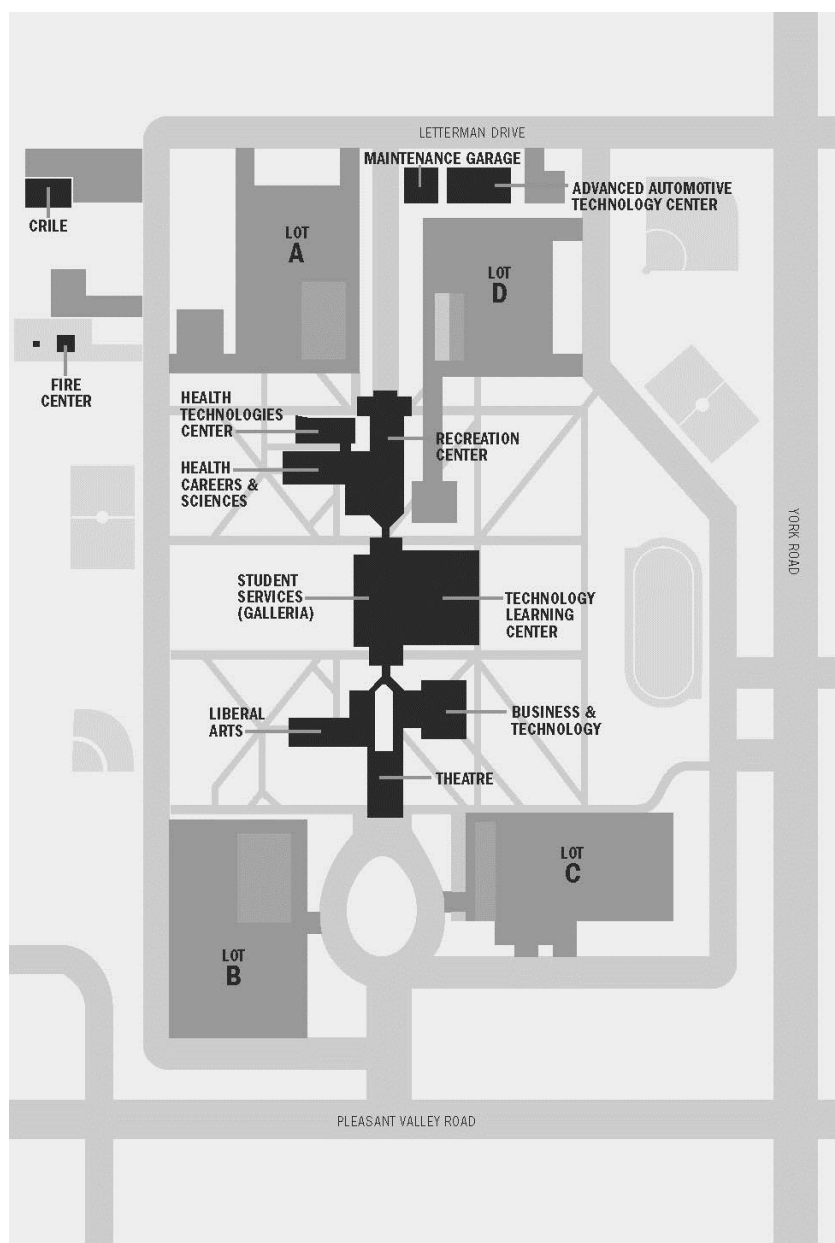
11000 Pleasant Valley Road
Parma, OH 44130-5199

By automobile:

The Western Campus is bound by Pleasant Valley Road to the south and York Road to the east. The campus is accessible from I-77 using the Pleasant Valley Road exit and traveling west on Pleasant Valley Road to the campus or from I-71 exiting at Bagley Road and traveling east on Bagley Road (its name changes to Pleasant Valley Road) to the campus. Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office (WSS 105, 216-987-5325).

By bus:

Routes: #45 Ridge operates 7 days, early morning through late night. #68 Bagley operates M-F, early morning through afternoon rush. #83 W. 130th operates 7 Days, early morning through evening. For the most up to date information, go to RideRTA.com and do on line trip planning or call the RTAnswerline at 216-621-9500.



Westshore Campus

31001 Clemens Road
Westlake, OH 44145

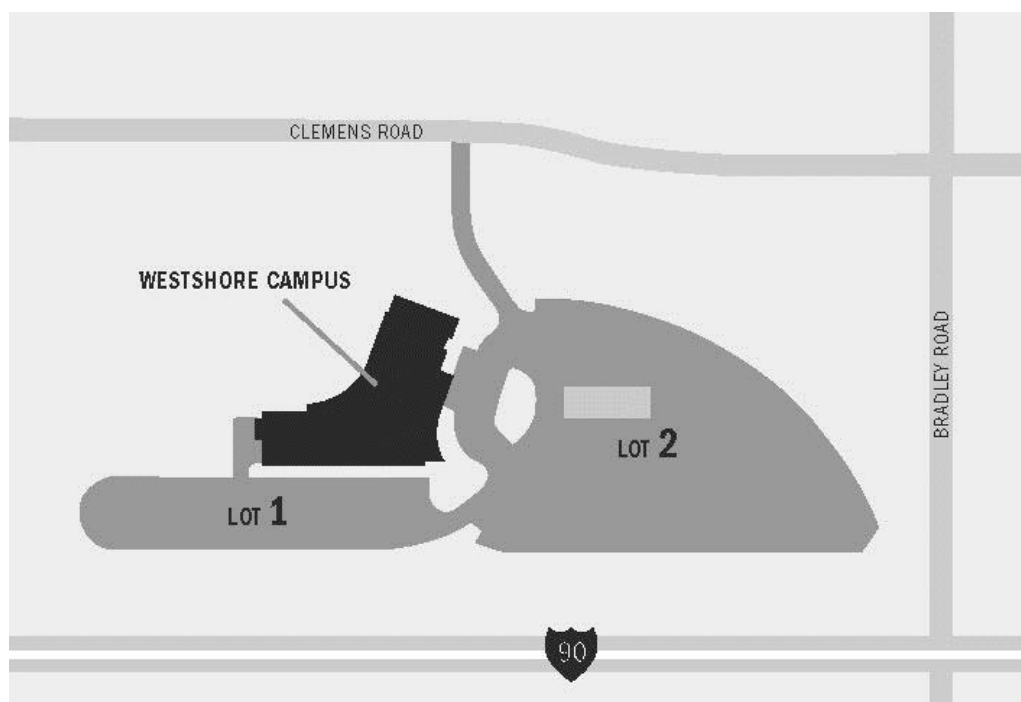
From the West:

Motorists traveling West on I-90 should take the Crocker Rd. / Basset Rd. exit (Exit 156). Turn right off the exit onto Crocker Road. Take an immediate left onto Clemens Road. The Westshore Campus entrance is about a half mile down the road, just after you pass the Bradley Road intersection.

From the East:

Motorists traveling East on I-90 should take the Crocker Rd. / Basset Rd. exit (Exit 156). Turn left off the exit onto Crocker Road. Take an immediate left onto Clemens Road. The Westshore Campus entrance is about a half mile down the road, just after you pass the Bradley Road intersection.

Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office



Unified Technologies Center (UTC)/WEDD

2415 Woodland Avenue
Cleveland, OH 44115-3239

Advanced Technology Training Center (ATTC)/WEDD

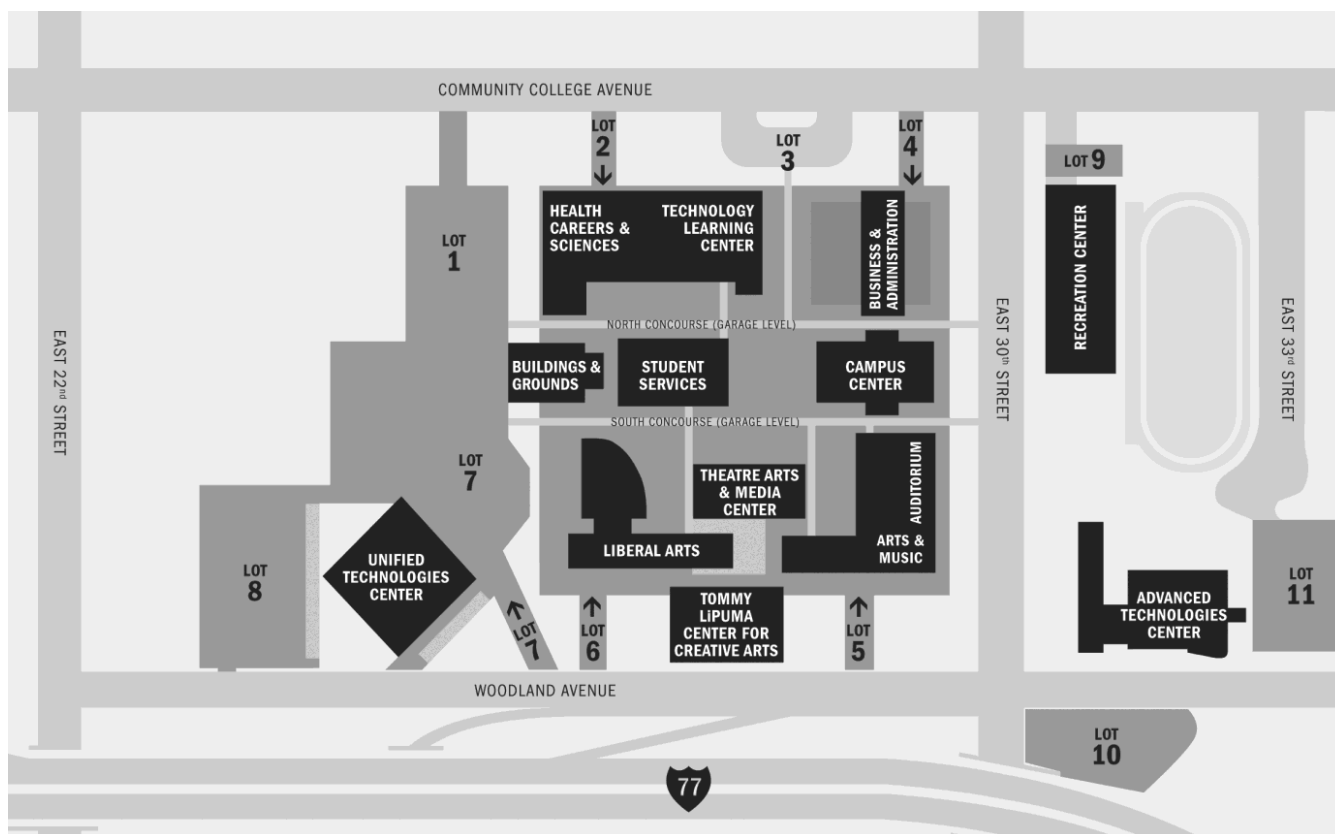
3409 Woodland Avenue
Cleveland, OH 44115-3239

By automobile:

Motorists can reach the UTC adjacent to Metropolitan Campus by traveling east or west via Euclid or Carnegie Avenue to East 30th Street and then south to the UTC. From I-77 northbound take the Cuyahoga Community College exit (East 30th Street) onto Woodland Ave. From I-90 eastbound and I-71 northbound take the exit to I-77 south and immediately exit onto East 30th Street. Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office (Concourse 90, 216-987-4325).

By bus:

Routes: #11 Quincy-Buckeye operates 7 days, early morning through late night. #14 Kinsman operates 24/7. #15 Union-Harvard operates early morning through late night. For the most up to date information, go to RideRTA.com and do on line trip planning or call the RTAanswerline at 216-621-9500.



Corporate College® East

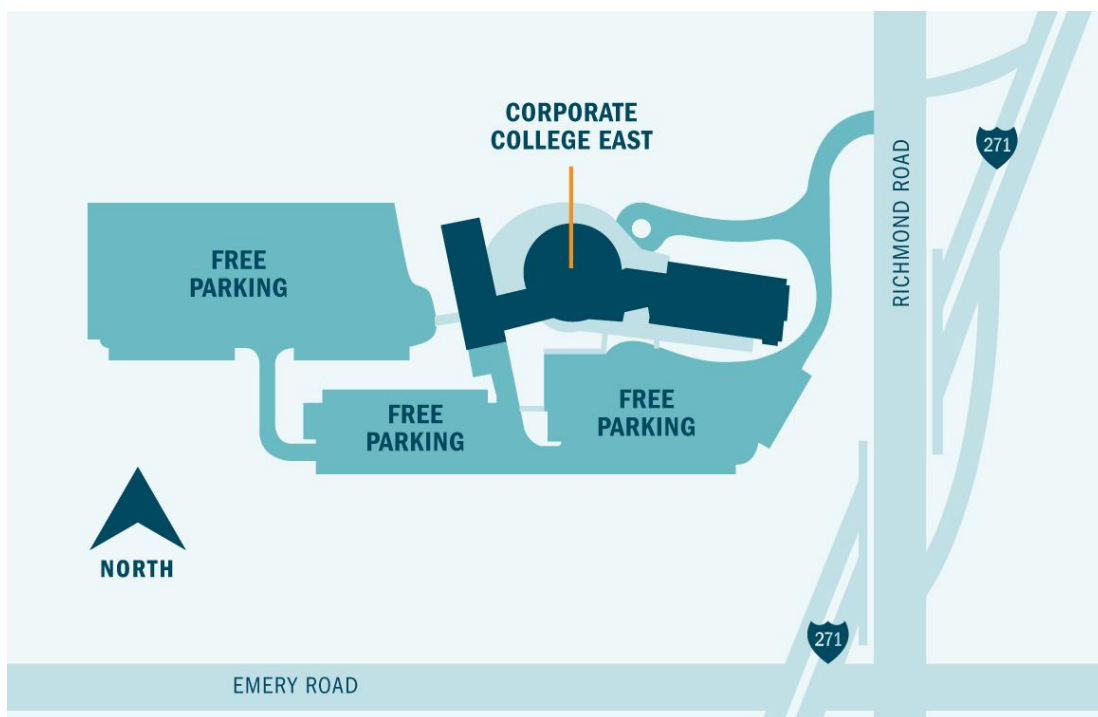
4400 Richmond Road
Warrensville, OH 44128

By automobile:

Corporate College East is easily accessed by traveling south on I-271, exiting at 28B Harvard Road. Proceed turning right off of the exit ramp, traveling west on Harvard Road. The entrance to Corporate College East is located on Richmond Road. No parking permits are required.

By bus:

Routes #15 Union-Harvard operates 7 days, early morning through late night. #94 E. 260th – Richmond operates M-F, early morning through evening. For the most up to date information, go to RideRTA.com and do on line trip planning or call the RTA Answerline at 216-621-9500.



Corporate College® West

25425 Center Ridge Road
Westlake, OH 44145

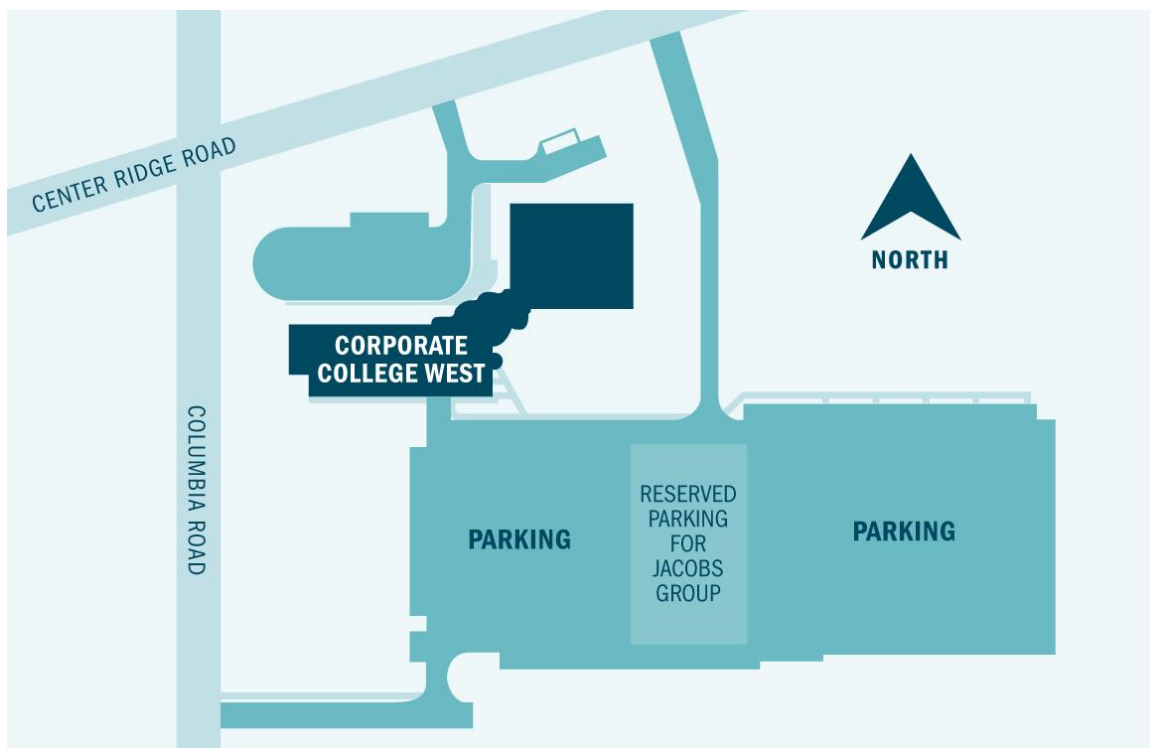
By automobile:

Located at 25425 Center Ridge Road in Westlake, Corporate College is easily accessed from I-90. Exit at Columbia Road (Rt. 252) and go south to Center Ridge Road. Corporate College is on the southeast corner. Enter from Center Ridge Road.

Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office. Do not park in spaces reserved for Jacobs Group.

By bus:

Routes: #49 Center Ridge operates 7 days, early morning through evening. For the most up to date information, go to RideRTA.com and do on line trip planning or call the RTAnswerline at 216-621-9500.



Brunswick University Center

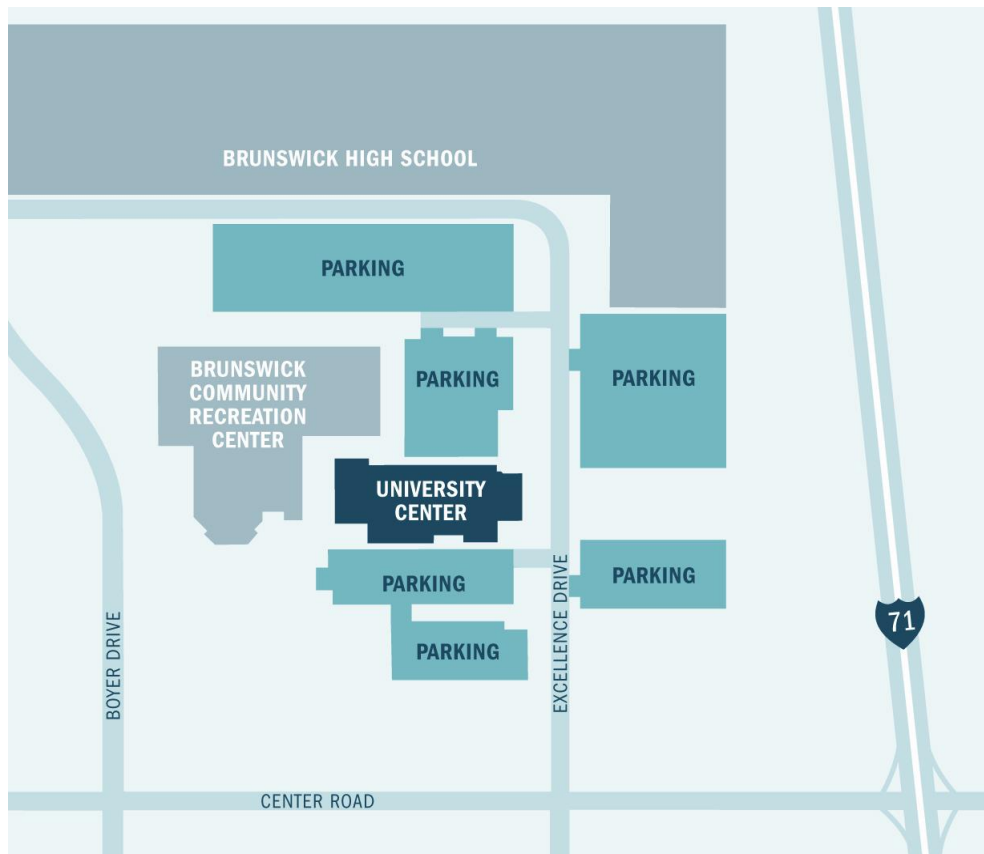
3605 Center Road
Brunswick, Ohio 44212

By automobile:

The Brunswick College Center is bound by Route 303 to the south and Old Eagle Drive to the east. Motorists traveling South on I-71 should take the Route 303 W/Center Rd. exit (Exit 226). Turn right off the exit onto Route 303/Center Road. The Brunswick College Center entrance is about one mile down the road on your right.

Please Note: The College has a pre-paid parking permit system on all campuses. Parking Permits are required to park in spaces designated for Faculty and Staff. Handicapped parking permits are available from the Public Safety Office

Motorists traveling North on I-71 should take the Route 303 W/Center Rd. exit (Exit 226). Turn left off the exit onto Route 303/Center Road. The Brunswick College Center entrance is about one mile down the road on your right.



BACCALAUREATE TRANSFER/LIBERAL ARTS

SUBJECT AREAS

Options for Transferring Credit

Transfer Module

Associate Degree Preferred Admission

Course-by-Course Transfer Evaluation

Two-Plus-Two Career/Tech

Subject Areas in the Liberal Arts and Sciences

American Sign Language	Journalism and Mass Communication
Anthropology	Latin
Art	Mathematics
Biology	Music
Chemistry	Philosophy
Chinese	Physical Education
Dance	Physical Science
Earth Science	Physics
Economics	Psychology
Education	Political Science
English	Religious Studies
English As A Second Language	Russian
French	Sociology
General Studies	Spanish
Geography	Speech Communication
German	Theatre Arts
Health	Urban Studies
History	Women's Studies
Humanities	
Italian	
Japanese	

OCCUPATIONAL CAREER PROGRAMS

Agricultural and Natural Resources Technology

Plant Science and Landscape Technology

Business Technologies

Accounting

Administrative Office Systems

Business Management

- Basic Program
- Human Resources Management
- International Business
- Small Business Management

Captioning and Court Reporting

Hospitality Management

- Culinary Art
- Lodging-Tourism Management
- Restaurant/Food Service Management

Information Technology

- Business Solutions
- Networking Software
- Programming and Development

Interior Design

Marketing

Media Arts & Studies

Paralegal Studies

Purchasing and Supply Management

Visual Communication and Design

- Digital Video and Digital Filmmaking
- Graphic Design
- Illustration
- Photography
- Web and Interactive Media

Engineering and Other Technologies

Automotive Technology

Construction Engineering Technology

Electrical/Electronic Engineering Technology

- Basic Program
- Bio-Medical
- Computer Networking Hardware
- Digital Communications

Integrated Systems Engineering Technology

Manufacturing Industrial Engineering Technology

Mechanical Engineering Technology

Recording Arts and Technology

Health Careers

Dental Hygiene

Diagnostic Medical Sonography

- Basic Program
- General Sonography

Dietetic Technology

Electroneurodiagnostic Technology

Emergency Medical Technology

Health Information Management

Human Services

Massage Therapy

Medical Assisting

Medical Laboratory Technology

Nuclear Medicine

Nursing

- Basic Program
- Accelerated Track
- Nursing Access LPN to RN

Occupational Therapy Assistant Technology

Optical Technology

Pharmacy Technology

Physical Therapist Assisting Technology

Radiography

Respiratory Care

Sport and Exercise Studies

Surgical Technology

Veterinary Technology

Public Service Technologies

Criminal Justice

- Basic Program
- Basic Police Academy
- Corrections
- Security Administration

Deaf Interpretive Services

Early Childhood Education

Environmental, Health & Safety Technology

Fire Technology

Apprenticeship Programs (Degrees and Certificates available)

Applied Industrial Technology

- Bricklaying
- Carpentry
- Cement Masonry
- Communication Transport Systems
- Construction Tending and Haz. Material Abatement
- Drywall Finishing
- Electrical Construction
- Floorlaying
- Glazing
- Ironworking
- Manufacturing Tech.
- Millwrighting
- Operating Engineers
- Painting
- Pile Driving
- Pipe Fitting
- Plumbing
- Sheet Metal Working

ONE-YEAR CERTIFICATE PROGRAMS

Agricultural and Natural Resources Technology

Plant Science and Landscape Technology (Landscape Tech)

Business Technologies

Business Management (Public Administration)

Food & Beverage Operations

Lodging Room Division

Interior Decorating

Office Operations Management

Payroll

Professional Baking

Professional Culinarian/Cook

Virtual Office Assistant

Visual Communication and Design (Graphic Design)

Engineering and Other Technologies

3D Digital Design and Manufacturing Technology

Automotive Technology

Computer - Aided Drafting (CAD)

Computer - Integrated Manufacturing (CIM)

Computer Maintenance Technology

Construction Project Management

Electronic Engineering Technician

Machine Tools Operations

Mechatronics

Quality Control

Health Careers

Dental Assisting

Dietary Management

General Nutrition

Massage Therapy

Medical Assisting

Optical Technology

Paramedic

Pharmacy Technician

Polysomnography

Practical Nursing

Sterile Processing & Distribution Technology

SHORT TERM CERTIFICATES in certain areas

POST-DEGREE PROFESSIONAL CERTIFICATE

Environmental, Health & Safety Technology

Information Technology

- Business Solutions
- Programming & Development

International Business

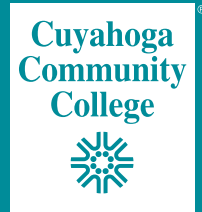
Legal Nurse Consultant

Massage Therapy

Paralegal Studies

Physician Assistant

Purchasing/Supply Mgmt



District Administration

700 Carnegie Ave.

Cleveland, OH 44115

216-987-6000

Eastern Campus

4250 Richmond Road

Highland Hills, OH 44122

216-987-2024

Metropolitan Campus

2900 Community College Ave.

Cleveland, OH 44115

216-987-4200

Western Campus

11000 Pleasant Valley Road

Parma, OH 44130

216-987-5150

Westshore Campus

31001 Clemens Road

Westlake, OH 44145

800-954-8742

Workforce and Economic

Development Division

2415 Woodland Ave.

Cleveland, OH 44115

216-987-3075

Brunswick University Center

3605 Center Road

Brunswick, OH 44212

866-933-5182

Hospitality Management Center

at Public Square

180 Euclid Ave.

Cleveland, OH 44113

866-933-5181

Corporate College® East

4400 Richmond Road

Warrensville Hts., OH 44128

866-806-CORP

www.corporatecollege.com

Corporate College® West

25425 Center Ridge Road

Westlake, OH 44145

866-806-CORP

www.corporatecollege.com

Advanced Technology Training Center

3409 Woodland Ave.

Cleveland, OH 44115

800-954-8742

www.tri-c.edu