



Cuyahoga Community College

Catalog

2016-2017

www.tri-c.edu/catalog

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Where futures beginSM

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.

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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**

230 South LaSalle Street
Suite 7-500
Chicago, IL 60602-1411
800-621-7440



A Message from the President

Welcome to Cuyahoga Community College (Tri-C®). 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 “one door with 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 190 degree and certificate programs, 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. Transfer and dual enrollment agreements offer seamless transition to a variety of universities upon completion of your degree, while short-term certificates and technical training provide the education necessary to compete for cutting-edge jobs.

Tri-C is redesigning the student experience and working to meet you where you are. With the adoption of an intentional case management approach to student success, we provide students with clearer pathways to degree and certificate completion. You will appreciate the flexibility, choice, and convenience of courses that fit your schedule. Select from offerings online, in the classroom, or a combination of both. Classes are held 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 are available to help you plan your academic journey and succeed in achieving your goals. Our vibrant Office of 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 educational 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	216-987-5588
Assessment	216-987-2256	216-987-4311	216-987-5256	216-987-3888
Bookstores	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	216-987-4325
Career Services	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	216-987-0595	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	216-987-5849
TDD for Hearing Impaired	216-987-2230	216-987-4048	216-987-5117	216-987-5117
Tutoring	216-987-2256	216-987-4311	216-987-5256	216-987-5902
Veteran Affairs	216-987-2015	216-987-4164	216-987-5203	216-987-5884
Workforce, Community, 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

FALL SEMESTER 2016	SPRING SEMESTER 2017	SUMMER SESSION 2017
FULL TERM 16-Week August 29, 2016-December 18, 2016	FULL TERM 16-Week January 17, 2017-May 14, 2017	FULL TERM 10-Week May 30, 2017-August 6, 2017
SESSION A 8-Week August 29 - October 23	SESSION A 8-Week January 17 - March 12	SESSION J 5-Week May 30 - July 2
SESSION B 8-Week October 24 - December 18	SESSION B 8-Week March 20 - May 15	SESSION K 5-Week July 3 - August 6
SESSION O 14-Week September 12 - December 18	SESSION O 14-Week January 30- May 15	SESSION L 8-Week June 12 - August 6

FALL SEMESTER 2016

Date	Day	Calendar Description
April 4-April 10	Monday-Sunday	Priority Registration
April 11-August 28	Monday-Sunday	Registration for Fall Semester 2016
August 29	Monday	Fall Semester (16-Week) and Session A (8-Week) Begin
September 5	Monday	Labor Day - College Closed - No Classes Scheduled
September 12	Monday	Session O Begins
September 26	Monday	Make up work to resolve 'Incomplete' grades due to faculty
October 5	Wednesday	Incomplete grades for 2016 Spring and Summer Semesters rolled to 'F' grades
October 23	Sunday	Session A Ends
October 24	Monday	Session A Final Grades Due
October 24	Monday	Session B Begins
November 11	Friday	Veterans' Day - College Closed - No Classes Scheduled
November 20	Sunday	Last Day to Withdraw from Full Term (16 Week) Course with a 'W' Grade***
November 24-November 27	Thursday-Sunday	Thanksgiving Recess - College Closed - No Classes Scheduled
December 12-18	Monday-Sunday	Final Exam Week - Full Term
December 15	Thursday	Fall 2015 Commencement (Date Tentative)
December 18	Sunday	Fall Semester Full Term, Session B and Session O End
December 20	Tuesday	Final Grades Due - Full Term, Session B and Session O
Dec 23-Jan 2, 2017	Friday-Monday	Winter Break - College Closed - No Classes Scheduled

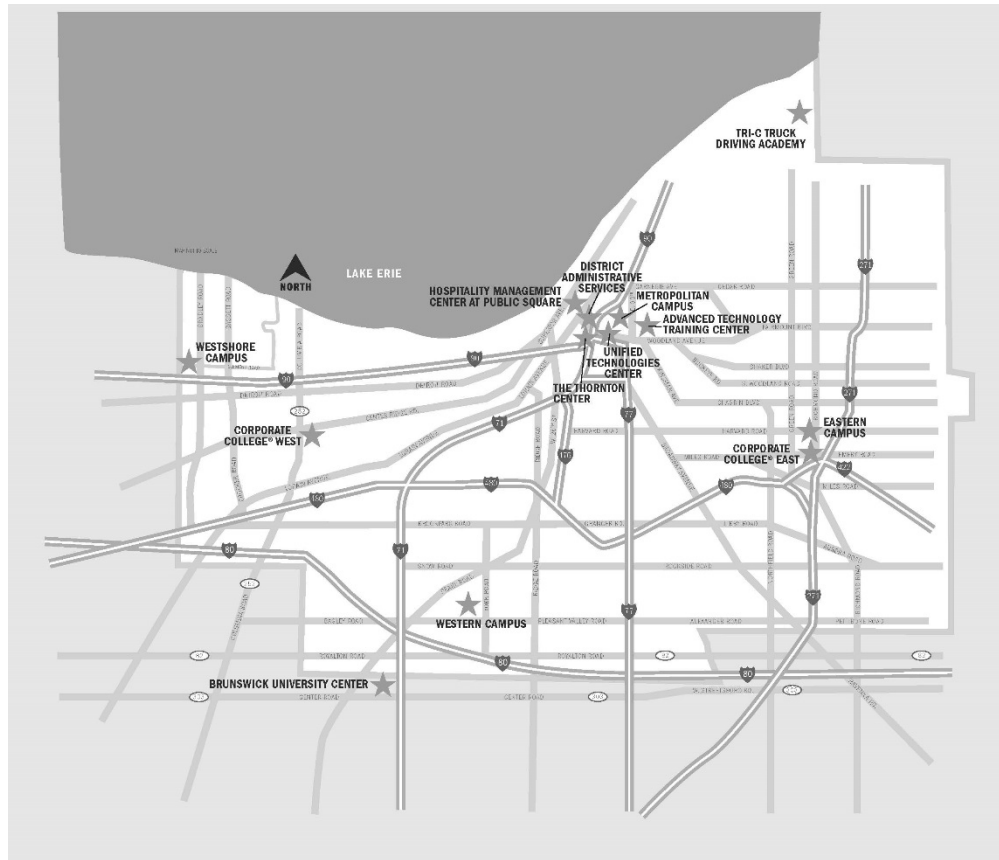
SPRING SEMESTER 2017

October 10-October 16	Monday-Sunday	Priority Registration
October 17-January 16	Monday-Monday	Registration for Spring Semester 2017
January 16	Monday	Martin Luther King Jr. Day - College Closed - No Classes Scheduled
January 17	Tuesday	Spring Semester Full Term and Session A Begin
January 30	Monday	Session O Begins
February 13	Monday	Make up work to resolve 'Incomplete' grades due to faculty
February 22	Wednesday	Incomplete grades for Fall 2016 Semester rolled to 'F' grades
March 12	Sunday	Session A Ends
March 13-19	Monday-Sunday	Spring Break - No Classes Scheduled
March 20	Monday	Session A Final Grades Due
March 20	Monday	Session B Begins
April 7	Friday	Deadline to Petition for Graduation for Spring and Summer 2017
April 9	Sunday	Last Day to Withdraw from Full Term (16 Week) Course with a 'W' Grade***
May 8-14	Monday-Sunday	Final Exam Week - Full Term
May 14	Sunday	Spring Semester Full Term, Session B and Session O End
May 16	Tuesday	Final Grades Due - Full Term, Session B and Session O
May 18	Thursday	Spring and Summer 2017 Commencement

SUMMER SESSION 2017

March 13-May 28	Monday-Sunday	Registration for Summer Session 2017
May 29	Monday	Memorial Day - College Closed
May 30	Tuesday	Summer Session Full Term and Session J Begin
June 12	Monday	Session L Begins
July 2	Sunday	Session J Ends
July 3	Monday	Session J Grades Due
July 3	Monday	Session K Begins
July 4	Tuesday	Independence Day Observation - College Closed - No Classes Scheduled
July 23	Sunday	Last Day to Withdraw from Full Term (10 Week) Course with a 'W' Grade ***
August 6	Sunday	Summer Session Full Term, Session K and Session L End
August 8	Tuesday	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: <http://www.tri-c.edu/academic-calendar/index.html>. Dates above are subject to change.



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

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

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

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

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

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

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

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

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

Manufacturing Technology 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 Human Resources at: Cuyahoga Community College, 2500 East 22nd Street, Cleveland, OH 44115, 216-987-4836. 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 2500 East 22nd Street, Cleveland, OH 44115, 216-987-0204.

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 60,000 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 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 serves students who want to complete their first two years of college in a high quality educational environment, as well as those seeking a direct-to-job educational experience. The Eastern Campus offers Associate of Arts and Associate of Science degrees for those wishing to transfer to a four-year institution. The Campus has articulation agreements with more than 40 four-year schools, including on-site bachelor's degrees with Hiram College. Located off I-271 in Highland Hills, the Campus includes four buildings with state-of-the-art classrooms and laboratories. Students can find strong support systems such as Enrollment, Financial Aid, Counseling, Career Center, Student Success Center, Learning Commons (library and technology support), Tutoring, Writing Center, and the Alfred Lerner Veterans Center. The Eastern Campus is also home to the Jack, Joseph and Morton Mandel Humanities Center, which provides high performing students a collaborative, problem-based learning environment with a focus on leadership development and community engagement. Additionally, the campus features the 600-seat Simon and Rose Mandel Theatre, Gallery East art gallery, and Cafe' 4250, a student-run restaurant (part of the College-wide Hospitality Management program). Students and community members can enjoy a healthy lifestyle with a gymnasium, indoor and outdoor tracks, natatorium, dance studio, fitness center, and massage therapy student clinic.

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 can 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, "The Bistro" serves breakfast and lunch during portions of the school year and is open to campus students, faculty, staff, and the community at large.

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 was 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 the Westshore Campus opening in 2011 and the existing Corporate College® West facility, Tri-C provides additional opportunities for

students to complete associate degrees for transfer to four-year institutions or for certificates/degrees leading to entry into the workforce in business and a variety of health careers areas. The Westshore Campus is a transfer-focused campus with an emphasis on Science, Technology, Engineering, Mathematics and Medical (STEMM), and Associate of Arts and Science programs and degrees.

The Westshore Campus offers a one-stop student services area, hosts Health Careers and Sciences as well as a variety of courses in liberal arts, business, IT, pre-engineering, nursing, emergency medical technology, English as a Second Language, and many more. The Campus also offers a Technology Learning Center, library, five science labs and four health career labs, including a human patient simulator. The Campus has a strong commitment to sustainability as noted by the LEED Gold status of its initial facility.

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

Community and 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.

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 skills 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.

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

Senior Adult Education

For more than 40 years, the Encore program at Cuyahoga Community College has been a premier provider of senior adult education opportunities for individuals 55 and older. Based on the concept of providing senior adult education programs within an academic environment, the program holds to an education standard that recognizes the intellectual interests of older students. To provide learning opportunities, Tri-C offers a unique approach to senior adult education with on- and off-campus experiences. The learning possibilities are endless through Encore Campus and the Neighborhood Scholars programs.

Encore Campus

Encore Campus is a leading senior adult education program for individuals 55 and older in Greater Cleveland. Students choose from a vast and diverse set of changing classes each session. Outstanding instructors, including current Tri-C staff, retired educators, and professionals crossing the span of education, the arts, business, and health and wellness, teach a variety of courses.

Neighborhood Scholars

Cuyahoga Community College's Neighborhood Scholars program, held in cooperation with community partners, brings its senior adult education program to various locations throughout Greater Cleveland. Our talented instructors offer classes traditionally provided on the College campuses.

Workforce, Community, and Economic Development Division

The Workforce, Community, and Economic Development Division (WCED) 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.

Public Safety Institute, a Tri-C Center of Excellence

The Public Safety Institute has provided over three decades of professional training to public safety professionals. The police, private security, and fire academies provide state-certified training for police officers, fire fighters, security officers, and first responders.

The law enforcement academies are certified through the Ohio Peace Officer Training Commission (OPOTC). The Workforce division recently opened its state-of-the-art Public Safety Training Center on the Western campus. Tri-C offers four basic OPOTC certified academies: Peace Officer Basic Training, Private Security Training, Bailiff, and Corrections.

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 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 Technology, a Tri-C Center of Excellence

The Manufacturing Technology Center of Excellence provides high demand training that meets the needs of the fast growing manufacturing industry in Northeast Ohio. Individuals receive affordable, high-quality training from industry professionals leading to high demand, portable and stackable skill credentials. The division offers credit, non-credit, certificate, and customized training programs.

The hub for Tri-C's manufacturing training is located at the beautiful Metropolitan Campus in the Manufacturing Technology Center. The training facility spans more than 113,000 square feet and is the largest industrial manufacturing training center in Northeast Ohio.

Programs include: Precision Machining, CNC Machining, Industrial Maintenance, Tool and Die Apprentice, Industrial Welding, Blueprint Reading, Shop Math, Computer-Aided Design (CAD), Quality Control, Electronics Assembly, Mechatronics, Programmable Logic Controls, and 3D/Additive Manufacturing. The Center will also house our Ideation Station Fab Lab.

Through consultation with an Industry Advisory Board, the standard and customized training programs provide individuals with highly marketable skills that are meeting the talent needs of employers throughout Northeast Ohio.

Truck Driving Academy

The Truck Driving Academy provides high-quality workforce training to meet the needs of employers in the Transportation, Distribution and Logistics sector.

Located in the Heritage Business Park in Euclid, Ohio, the Truck Driving Academy operates in an industrial environment and provides hands-on training utilizing industry standard equipment, transportation vehicles, and a driving simulator.

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 both the clinical and non-clinical workforce needs of the health care industry. The Center provides training to address critical health care employment shortages through our wide selection of continuing education and professional certification programs.

The Center works closely with the advisory board, consisting of representatives from the health care industry, to develop accelerated training and education programs that quickly meet critical workforce needs. All training is scheduled for the convenience of students during the day, evenings, or on weekends, at multiple Cuyahoga Community College campuses.

Entry-level career programs/certifications:

- State Tested Nursing Assistant (STNA)
- Dental Assistant Radiography Initial Training, Radiation Protection Update Training, and Managing Medical Emergencies for Dental Hygienists
- Community Health Worker/Lay Navigator
- Patient Access Specialist Certified Professional Coding Program
- Patient Care Nursing Assistant

The Center also works with health care organizations to develop customized solutions to meet specific workforce needs. Our programs stay current with the rapidly changing health care industry, and our expert instructors focus training on the technical and soft skills needed to succeed on the job. Whether you are a health care professional searching for career advancement, or considering a career change to the health care field, the Center offers high quality programs to meet your needs.

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

General Information

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, and also offers classes at the Brunswick University Center.

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 training and talent management solutions help organizations become more efficient, grow employee skills, and retain top talent. We strive to improve individual, team, and organizational performance. Programs and services are delivered 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

- Lean and Lean Six Sigma
- Leadership
- ISO, Quality and Compliance
- Project Management
- Information Technology
- State Tested Nursing Assistant and Medical Coding & Billing
- Finance and Manager of Apartments
- Customer Service

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.

Center for Information Technology, a Tri-C Center of Excellence The Center for Information Technology provides industry-certified training tailored to meet the

information technology needs in Northeast Ohio. With courses available both online and flexibly scheduled, the Center for Information Technology provides training and professional certification programs for individuals seeking a new career in IT. Some of the programs available through the Center include:

- Cyber Security
- Cloud Computing/Virtualization
- Analytics/Big Data
- Mobile Development/User Experience Focus
- Agile Development/Project Management
- Cleveland Codes Software Developer Academy

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. 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 (JRCEDMS)
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. 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:

- one or two courses for personal interest;
- a two-year program to prepare for transfer to a four-year college; or
- a career/occupational program to prepare for employment.

The general admissions procedure of Tri-C does NOT ENSURE ADMISSION 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 the admission process well in advance. Students may take courses at more than one campus.

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

How to Apply

- You can apply online at www.tri-c.edu/apply;
- Submit an official high school transcript with graduation date or GED scores. 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; or
- 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 while attending another college or university are accepted as Transient (Visiting) students. 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 tuition. 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 Department of Higher Education, 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 Friday prior to the student's first class in order for the change to be effective for that semester.

For more information to see if you qualify for a change of residency, please go to www.tri-c.edu/residency or any campus Enrollment Center.

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 non-immigrant 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 each of the campuses to address deadlines for F-1 international student admission and for other F-1 information.

For information that involves maintaining your visa status such as work permission, authorized withdrawals, transfers and program extensions, please visit www.tri-c.edu/get-started/international-students or see the Special Student Services Coordinator at the campus listed on your I-20:

East 216-987-2118 • 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 Office at 216-987-6000 and select option #4.

Transfer from Tri-C to a Four-Year Institution

The process of transferring courses from Tri-C to another college or university begins when the student meets with a counselor and selects courses that are guaranteed to transfer. Courses the student selects should meet Tri-C's minimum graduation requirements and, ideally, as many of the transfer institution's graduation requirements as possible. The student should also meet with an admissions and/or advising representative of the transfer institution, as this representative will have the most recent information on the transfer institution's graduation requirements. Acceptance of transfer credit is always at the discretion of the transfer institution. To shorten the student's path to a degree, the Ohio Department of Higher Education has established credit transfer guarantees which include, but are not limited to, courses in the Ohio Transfer Module (see Appendix I in this Catalog) and Transfer Assurance Guides (TAGs, see Appendix II in this Catalog). These courses are guaranteed to transfer to any four-year public college or university in the state of Ohio.

Courses that are not part of the Ohio Transfer Module or Transfer Assurance Guides are assured to transfer only as part of an approved articulation agreement between Tri-C and a four-year college or university. A counselor can provide information about which degree programs have articulated credit. The student should note that courses with numbers lower than 1000 usually do not transfer. See Course Numbering and Appendix V in this Catalog.

The student should schedule a meeting with the transfer college or university's admissions office to make sure that he or she has met all the transfer institution's admissions and transfer requirements. As part of its admissions review process, the transfer institution will require an official transcript of courses the student has completed at Tri-C. Transcripts can be ordered online at <http://www.tri-c.edu/transcripts/>, and the cost is \$5.00 per transcript.

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 (USAFI).

Transient (Visiting) Status

- A. If a student wishes to take a course for credit at another institution while attending Tri-C, he or she should:
 - Request a Transient (Visiting) Student form from the Counseling Office.
 - Complete the form, obtain approval from a counselor, and return it to the Enrollment Center.
 - The Enrollment Center will confirm the student's status.
 - Upon completion of the course, the Tri-C student should request an official transcript be sent from the visiting institution to the Office of the Registrar, P.O. Box 5966, Cleveland, Ohio 44101-0966.
- B. If you are attending another college or university and would like to take classes that will transfer back to your home institution, apply as a visiting or transient student at Tri-C. For more information go to www.tri-c.edu/get-started/visiting-students.html

College Credit Plus

College Credit Plus allows students in grades 7 - 12 to earn college and high school credits at the same time by taking college courses at Cuyahoga Community College. The purpose of this program is to promote rigorous academic pursuits and to provide a wide variety of options to college-ready students. Typically, taking a college course through the College Credit Plus program is free. This means no cost for tuition, books or fees. For more information go to www.tri-c.edu/college-credit-plus

Program 60 Admission

Through Program 60, residents of Ohio aged 60 and older may register for regularly scheduled credit and select 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. For more information go to www.tri-c.edu/program60.

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 (CT)² is a collaborative effort among the Ohio Department of Higher Education, 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 (CTAGs) which identify the specific courses which are part of the statewide guarantee. Additional information can also be found on the Ohio Department of Higher Education website: <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.

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 Tri-C email address of 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 and the next student is notified.

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

All four Tri-C campuses offer assessment services. Tri-C assesses the English and math skills of its students and prescribes enrollment in appropriate English and math courses to maximize the students' opportunities for open access, equity, and academic excellence.

The following students must participate in the assessment and placement process prior to registration:

- All students registering for an initial English or math course;
- All students who register for 12 or more credits during their initial term at Tri-C;

- All students who have accumulated a total of 12 credits during previous terms; or
- All applicants who are currently in high school

Students may retake their placement tests one time without charge within 24 months of taking the test the first time. Placement scores will be valid for a maximum of two years from the date the original placement test was taken. Persons holding a college degree may have the assessment process waived.

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

Students may use qualifying ACT or SAT scores instead of taking the ACCUPLACER math and English placement tests. Students who perform well on the placement tests may reduce the number of courses they are required to take. Therefore, students should prepare for the placement tests by reviewing basic math and English concepts.

Fast Forward

Fast Forward is a requirement at Tri-C that mandates students who place into developmental classes enroll in these classes during their first semester. Completing developmental courses first increases students' basic skills, which can increase their chances of success in college-level course work.

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. The student will receive a 100% refund for the course.

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 register for a class that has not already met. Exceptions must be approved in writing by the academic Associate Dean responsible for the discipline. Contact the Enrollment Center or refer to *my Tri-C space* for withdrawal/refund information.

Changes in Curriculum, Fees, and Other Requirements

The Cuyahoga Community College Board of Trustees 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 Department of Higher Education.

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

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)

Withdraws/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 tuition and fee liability and available refunds for full-term courses of academic credit:

Tuition & Fee Liability/Refund	Full Semester
First Week.....	0% / 100%
Second Week.....	30% / 70%
Third Week.....	50% / 50%
Fourth Week.....	75% / 25%
Fifth Week and after	100% / 0%

Admissions, Registration and Money Matters

The withdraw/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

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>.

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. Students can obtain complete information about procedures and financial aid application process on the Student Financial Aid & Scholarships Office website 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	May 1
Fall Semester	July 1
Spring Semester	December 1

Financial Aid Options

State Grant Program

Ohio College Opportunity Grants: Tri-C students are no longer eligible to receive state grant aid from the Ohio Department of Higher Education 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 their 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 their 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 the 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.

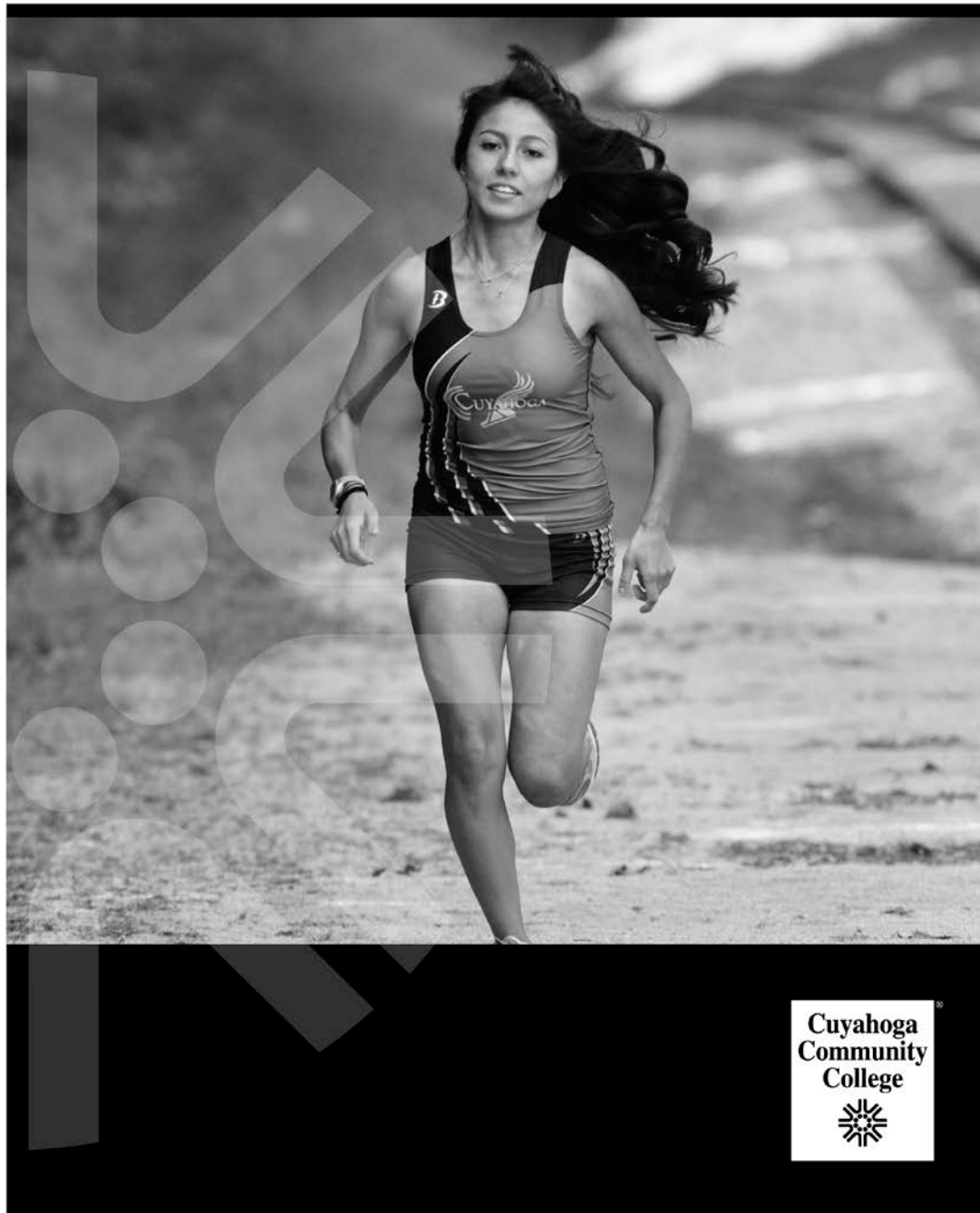
Lifetime Learning Credit

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 the American Opportunity Credit and Lifetime Learning Credit 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 (AOTC) 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 AOTC, 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 a 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 documented 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 is committed to students successfully completing degrees, certificates, and transfer programs. This commitment is demonstrated by the mandatory First Year Experience requirement that is designed to provide the support, information, tools, and connections necessary for success. The First Year Experience includes three key touch points:

- **New Student Orientation** connects students to a counselor, helps them select the right courses, learn important steps for success, and identify a major or program. New Student Orientation is offered through the Counseling Office at all the campuses.
- **New Student Convocation** officially welcomes new students to the College prior to the start of their first semester. Convocation has two major goals: 1) to make certain that students understand the pace, rigor, and expectations of the College, and to provide advice on meeting these expectations; and 2) to connect students to the faculty and academic leadership in their major or program of study.
- **First Year Success Seminar** is a course offered during a new student's first semester. The course goals include: understanding key College processes and services; practicing academic success strategies such as time management and study skills; deepening connections to program faculty and staff; and creating an academic plan that leads directly to degree or credential completion.

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 (<https://my.tri-c.edu>) is a portal that provides the primary point of access, a virtual "front door," to resources students use on a regular basis. It includes links to registration, grades, financial aid, Blackboard, announcements, campus news, government websites, or group activities. The information is personalized and organized by headings, which is easily navigated. Each heading links to sub-headings that allow quick access to important information.

Tri-C issues each student an email account. It is accessible by logging in to *my Tri-C space* and selecting the Student heading and clicking on the Student email icon. You can view your Tri-C email address and update your personal

email address by going to the Student heading and selecting "Update My Personal Email." **Your Tri-C student email account is the official and primary communication method between Tri-C and students.**

For additional information about student email, please visit <http://itservices.tri-c.edu/network/student-email-with-office-365.html>.

Updating Student Information

my Tri-C space provides personal student information such as registration, student schedules, student records, Degree Works (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 tab located in *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. For an additional convenience, the College Bookstores also offer online ordering of textbooks either from the external Tri-C website 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 website 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 Bookstore. A Dining Dollars Meal Plan for use in the Campus dining facilities is available as part of the My Tri-C Card program.

For locations, current hours, and contact information go to <http://www.tri-c.edu/student-life/campus-dining/>.

Housing

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

Campus Parking

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 hold; vehicle impounded; and 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.

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.

Student Affairs

- 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 website at: <http://www.tri-c.edu/access/> 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 needed support services to students of the Metropolitan, Eastern, and Western Campuses through graduation and/or transfer to a four-year institution. Services include: academic and financial aid advising, career exploration, tutoring, study groups, and transfer assistance. Qualified participants include U.S. citizens or permanent residents who are income eligible and first-generation college students with a need for academic support services. Participants may belong to only one campus SSS program. SSS is funded by the U.S. Department of Education and Cuyahoga Community College. Call 216-987-4149 (Metro), 216-987-2700 (East), or 216-987-5360 (West) or visit: www.tri-c.edu/ss.

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 30,000 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 800 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 2015-2016, Tri-C hosted six 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 Technology
- 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
- Interior Design Student Organization
- East Anime Club
- Association of Diagnostic Medical Imaging Technology Club
- Biology Club
- Business Club
- Campus Activities Board
- Campus Ministry
- Captioning and Court Reporting Club
- Collegiate 100
- Commuter Club
- Creative Writing Club
- Dance Club
- Dietetic Tech Club
- Disney Fanime' Club
- Drama Club
- Educators of Today and Tomorrow Club
- Electroneurodiagnostic Technonology Club
- Engineering Club
- Eta Sigma Delta Hospitality Management Honor Society
- Focus on Christ Club
- French Club
- Graphics Arts 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
- Nuclear Medicine Club
- Nursing Student Association
- Occupational Therapy Assistant Club
- PA Student Falkenstein Society
- Pharmacy Club
- Phi Theta Kappa Honor Society
- Philosophy Club
- National Association of Landscape Professionals
- Personal Finance Investment Club
- Psychology Club
- Physical Therapy Club
- Pottery Club
- Religious Clubs
- Respiratory Care Club
- Russian Club
- Student Newspaper, *The Voice*
- Students In Free Enterprise (S.I.F.E.)
- Student Peace Alliance
- Theatre Arts Club
- Tri-C Entrepreneur Club
- Tri-C Game Design Club
- Veterans Today Club
- Vet-Tech Club
- Xtreme Fitness and Wellness 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 teal, white and black. 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 website: www.tri-c.edu/ptk.

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, 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 fitness center, gymnasium, swimming pool, weight training room, dance studio, and locker and shower rooms. The Recreation & Wellness Center 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 multipurpose field.

The indoor facilities at the Western Campus include a fitness center, gymnasium, swimming pool, weight training room, and 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 by 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.

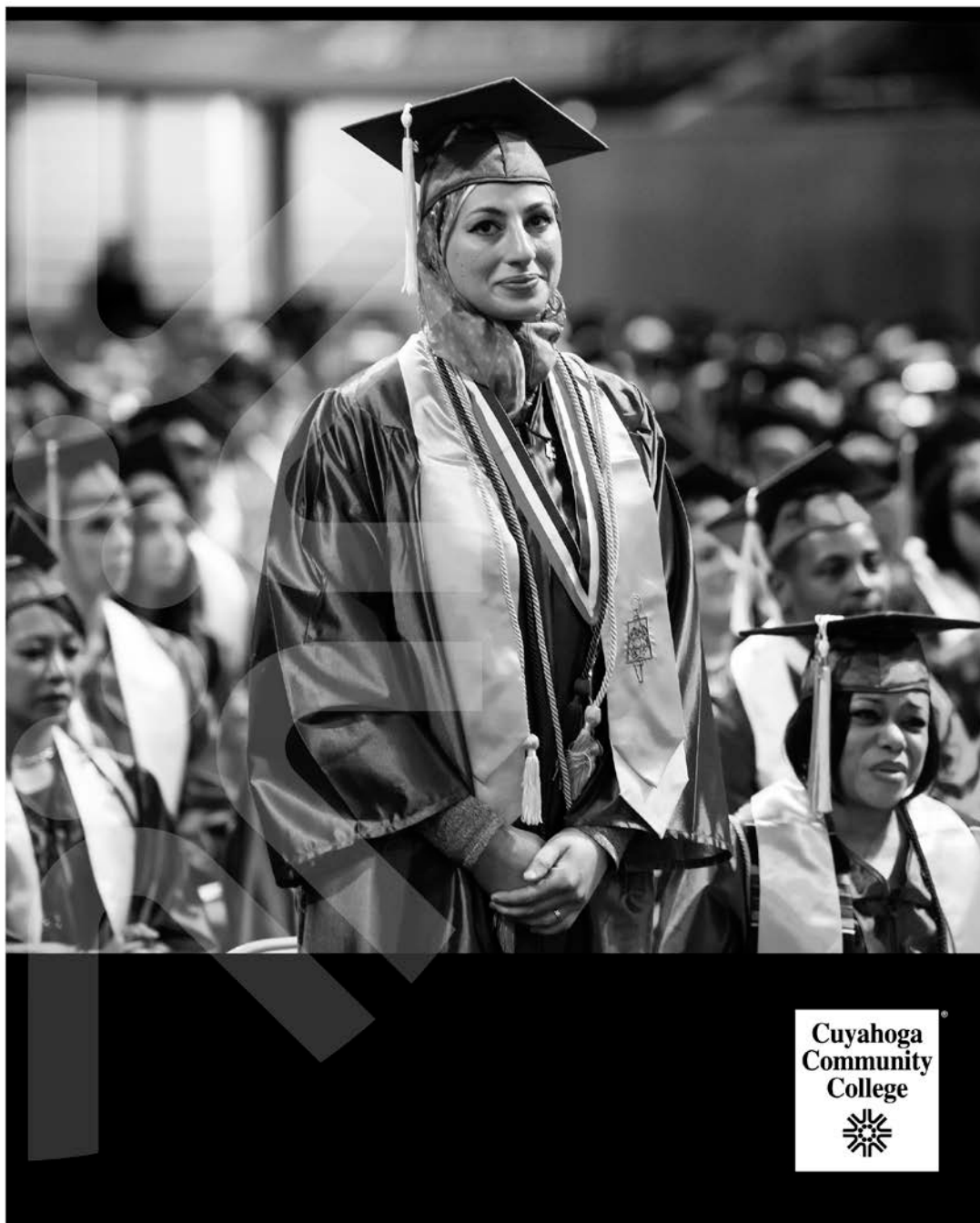
Cuyahoga Community College Alumni Initiative

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.

Services and benefits available to Cuyahoga Community College alumni include:

- An alumni website, www.tri-c.edu/alumni;
- Discounts and benefits for goods and services across the county, available at www.tri-c.edu/alumni;
- Job search, career resources and professional networking opportunities;
- E-newsletter sharing news including professional achievements of alumni, College information, and special discount offers.

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.





Academic Information

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Student Rights and Responsibilities

For a comprehensive list of all Tri-C procedures, please refer to the Student Handbook <http://www.tri-c.edu/student-resources/student-handbook.html>. The Handbook may be accessed by logging into *my Tri-C space* and clicking on the Tri-C Life tab. The Student Handbook is in the College Policies channel.

Student Conduct Code

The Student Conduct Code is established to support 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 the College. The Student Conduct Code identifies prohibited conduct and clarifies when the code applies to student behavior. The Student Conduct Code is closely related to the Student Judicial System procedure, 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 referenced in the Student Rights and Responsibilities section 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. Eligibility for federal student financial aid is, in part, based on your enrollment status.

Students who do not attend classes for the entire term are required to withdraw from the course(s). Additionally, students who withdraw from a course or stop attending class without officially withdrawing may be required to return all or a portion of the financial aid based on the date of last attendance. Students who do not attend the full session are responsible for withdrawing from the course(s).

Tri-C is responsible for identifying students who have not attended a course, before financial aid funds can be applied to students' accounts. Therefore, attendance will be recorded in the following ways:

- For in-person and blended-learning courses, students are required to attend the course by the 15th day of the semester, or equivalent for terms shorter than 5-weeks, to be considered attending. Students who have not met all attendance requirements for in-person and blended courses, as described herein, within the
- first two weeks, or equivalent, will be considered not attending.

- For online courses, students are required to login in at least two (2) times per week and submit one (1) assignment per week for the first two (2) weeks of the semester, or equivalent to the 15th day of the term. Students who have not met all attendance requirements for online courses, as described herein, within the first two weeks, or equivalent, will be considered not attending.

At the conclusion of the first two weeks of a semester, or equivalent, instructors report any registered students who have "Never Attended" a course. Those students will be administratively withdrawn from that course. However, after the time period in the previous paragraphs, if a student stops attending a class, wants or needs to withdraw, for any reason, it is the student's responsibility to take action to withdraw from the course. Students must complete and submit the appropriate Tri-C form by the established withdrawal deadline.

Tri-C is required to ensure that students receive financial aid only for courses that they attend and complete. Students reported for not attending at least one of their registered courses will have all financial aid funds held until confirmation of attendance in registered courses has been verified. 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.

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 website 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 My Info channel located on the Student 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 website at: <http://www.tri-c.edu/administrative-departments/campus-police/>.

Academic Information

Advanced Placement Exams

The State of Ohio, working with public institutions of higher education, has initiated policies to facilitate the ease of transition from high school to college, as well as between and among Ohio's public colleges and universities.

Beginning in the Fall term 2009:

- Students obtaining an Advanced Placement (AP) exam score of 3 or above will be awarded the aligned course(s) and credits for the AP exam area(s) successfully completed.
- General Education courses and credits received will be applied towards graduation and will satisfy a general education requirement if the course(s) to which the AP area is equivalent fulfill(s) a requirement.
- If an equivalent course is not available for the AP exam area completed, elective or area credit will be awarded in the appropriate academic discipline and will be applied towards graduation where such elective credit options exist within the academic major.
- Additional courses or credits may be available when a score of 4 or 5 is obtained. Award of credit for higher score values varies depending on the institution and academic discipline.

In academic disciplines containing highly dependent sequences (Sciences, Technology, Engineering and Mathematics – STEM) students are strongly advised to confer with the college/university advising staff to ensure they have the appropriate foundation to be successful in advanced coursework within the sequence.

A complete list of all the AP Credit Awards at Cuyahoga Community College can be found at: <https://transfercredit.ohio.gov/ap/3?1579363519374>.

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 before changing majors.

Prior Learning Procedure

Prior Learning is defined as academic credit awarded to registered students upon demonstration of knowledge equivalent to that gained through a college course. A student must be currently enrolled in a minimum of 12 semester credit hours, or have completed a minimum of 20 semester credit hours, at Tri-C and be in good standing (maintain a minimum 2.0 GPA) 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 Prior Learning. Awarded Prior Learning will not affect a student's grade point average or quality points. Also, the awarded Prior Learning will not substitute for the required 20 semester credits of residency needed for college graduation. Standardized methods of evaluation are used to measure a student's demonstrated knowledge of a subject area. Upon completion, the student will be awarded the same academic credit as that designated for the course. The student should see a counselor for any additional requirements.

Prior Learning Options

Recognized options under which Prior Learning 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. For information on testing sites and exam options, see the CLEP website: <https://clep.collegeboard.org/>

DANTES Subject Standardized Tests - DANTES is a group of standardized tests originally developed for the voluntary education programs of the U.S. Armed Forces. The tests have now been made available for civilian use.

Academic Information

These civilian tests are administered through Educational Testing Services.

American Council on Education (ACE) - ACE makes policy recommendations and facilitates credit award decisions for alternative educational experiences, offering guidance to colleges and universities on how to evaluate and award credit for these experiences. Examples include

- **Military Training Credit**
Prior learning credit can be awarded for education a student received while a member of the U.S. Armed Forces. For more information, see ACE's "Transfer Guide: Understanding Your Military Transcript and ACE Credit Recommendations" at www.acenet.edu.
- **Standardized Training and Certification Programs**
Prior learning credit can also be awarded for numerous standard training and certification programs. For more information, see ACE's "National Guide to College Credit for Workforce Training" at www.acenet.edu.

Credit by Exam (CBE) - There are many courses offered at Tri-C for which Prior Learning may be awarded by a student's taking and passing a comprehensive exam on the course subject. CBE for a particular course may be taken only once. For more information, schedule an appointment with a counselor for an overview of CBE.

Bypass Credit - Bypass 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. For more information, schedule an appointment with a counselor for an overview of the Bypass Credit process.

Cross-Registration

Qualifying full-time Tri-C students (currently registered for 12 or more credits) 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.
- For assistance with online learning technology, please call: 216-987-4257.
- Email elarning@tri-c.edu.

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

Online

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 the 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

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

Smart CLASS formerly known as 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.

- *Smart CLASS* courses are broadcast on Tri-C's SmartTV and video streamed on the SmartTV Web site at: <http://www.tri-c.edu/online-learning/smart-tv.html>.
- Students enrolled in *Smart CLASS* 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 checkout. 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.

DegreeWorks

The DegreeWorks System is a software tool which significantly eases the academic advising process for students. DegreeWorks 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.

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**

Academic Information

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" (Failure) 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 are encouraged to make an appointment to see a 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 Student Tab. APR grades do not appear on the student's permanent record.

Articulation & Prior Learning Grading

AC (Articulation Credit)
ACE (American Council on Education)
AP (Advanced Placement)
BYP (Bypass)
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's successfully passing a college-wide equivalency exam or other recognized method of prior learning assessment. 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. Any awarded Prior Learning does 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
					<hr/>
					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, 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 continue on probation until attaining the cumulative GPA listed above, as long as term GPA is 2.00 or higher.

A student placed on academic first probation (P1) at the end of Fall semester will be required to participate in one of the following Student Success Probation Interventions in order to register for courses the following Fall.

A student placed on academic first probation (P1) at the end of Spring or Summer semester will be required to participate in one of the following Student Success Probation Interventions in order to register for courses the following Spring:

- a. Online “Student Success Probation Workshop”; or
- b. Academic First Probation appointment with a Counselor

A “hold” will be placed on the student’s account prohibiting registration. Once the student has participated in one of the Student Success Probation Interventions, the “hold” will be expired and registration will be permitted.

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 in the chart under Academic Probation
- Term GPA is less than 2.0.

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 or 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 Office.

Upon readmission after academic dismissal, students must:

- meet with a counselor;
- complete an academic plan; and
- register for no more than two courses as recommended by a counselor.

Once readmitted, the academic status is “Second 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) is the Pass/No Pass grade option which allows students to earn credits for a course without the penalty of a grade impacting their grade point average.

A Pass (P) grade is awarded for A, B or C work in the course. A No Pass (NP) grade is awarded for D or F work. A student can elect up to 12 credits taken as Pass/No Pass to fulfill degree requirements at Tri-C. Whereas audited courses do not transfer, Pass/No Pass courses may transfer to another college or university. Check with the receiving institution on their transfer policy concerning Pass/No Pass.

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.

College Credit Plus 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.

Tri-C students are permitted to audit one or more courses. Careful consideration is advised before auditing 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. View at www.tri-c.edu/student-resources/enrollment-guide.html.

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 website: www.tri-c.edu/honors. The Assistant Dean-Honors and Experiential Learning Programs and the campus Honors Faculty Coordinators listed there are available to assist by phone, email, or in person.

Academic Honors: Dean's List

The 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 greater while completing 12 or more credit hours during the preceding term.

Graduation with Honors

Candidates for associate degrees who demonstrate outstanding academic achievement graduate from Tri-C with honors. Graduation with honors is conferred upon candidates as follows, based upon their cumulative grade point average:

Cum laude (with honors):	3.50 – 3.69
Magna cum laude (with great honors):	3.70 – 3.89
Summa cum laude (with highest honors):	3.90 – 4.00

Honors designations are based solely upon coursework completed at Tri-C, including grades that have been

recalculated or forgiven under other policies. Honors candidates are recognized in the Commencement Guide at each ceremony based upon coursework completed prior to their final term of enrollment. Following completion and verification of all degree requirements – including final term courses – honors designations are inscribed on diplomas and are noted on official transcripts.

General Graduation Information

The Office of the Registrar is responsible for identifying students who have met all the requirements for degree or certificate programs at Cuyahoga Community College. Once those students have met requirements, they will be graduated. Students will receive an email from the Office of the Registrar to their Tri-C email account once a graduation petition is submitted. This email will confirm that the student has registered for the necessary courses, and, pending successful completion of those courses, they can expect to receive their diploma(s) or certificate(s) at the end of the semester. Once those courses have been completed successfully, students will be graduated. Graduates will receive their diploma(s) or certificate(s) through the U.S. Postal Service based on the address on file with the College.

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. "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.

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 Student tab/ Academic 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*, Student 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 and refund deadlines are available:

- in the semester Enrollment Guide;
- on the "Paying for College" tab on *my Tri-C space*; or
- in any Enrollment Center

Students must withdraw online or submit a withdrawal form at the Enrollment Center. 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 numbers for the Enrollment Centers:

East: 216-987-2214
 Metro: 216-987-3283
 West: 216-987-5071
 Westshore: 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 he or she 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 or other extenuating circumstances) may petition for a withdrawal exception by completing a Withdrawal Exception Petition and submitting substantiating documentation to the Enrollment Center. Submission of a Petition for Withdrawal Exception does not guarantee approval. A recommendation by the committee to approve a request must also have the appropriate instructor and academic dean's approval when the student has received a final grade. A recommendation by the committee to deny a request is final. The Withdrawal Exception Review Committee meets monthly to review petitions. Students must submit a Withdrawal Exception Petition within 30 days of the end of the academic semester for consideration.

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. Co-op assignments are at least 180 hours where 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.

Two types of co-op work schedules are available: part time and full time, either of which can be coordinated

Academic Information

with academic schedules.

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

- Be currently enrolled at least part-time (6 credit hours or more) at Tri-C, except for Summer term co-ops or when the co-op is the final needed degree requirement.
- Be working toward a Tri-C degree or program certification.
- Have completed 12 or more credits of college-level coursework, transfer credits included.
- Have successfully completed (“C” grade or better) at least two courses related to the major field or have equivalent experience (subject to the employer’s requirements).
- Have a cumulative GPA of 2.75 or better.
- Complete the co-op application process and orientation process.
- Must complete three job readiness workshops: Resumes That Get Results; Ace That Interview; and New Job: Tips for Success!
- Complete and sign an experiential learning (co-op) agreement.
- Enroll in the designated co-op course section by the start date of the co-op experience.

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

Tutoring at each campus provides students the resources to improve skills, develop strengths and maximize achievement in many college courses. Study guides, outlines, and books can be reviewed to help students organize work. Also available are:

- Study-skills workshops;
- Tutoring, individual and small-group, in many academic subjects;
- Workshops in mathematics, reading, writing and science skills.

Find out how to learn more effectively by calling these numbers or visiting these locations for more information.

East: 216-987-2256 • ESS 1108

Metro: 216-987-4311 • MSS 4th floor

West: 216-987-5256 • WTLC GT 115

Westshore: 216-987-5902 • WSHCS 130 in the TLC

CCW: 216-987-5902 • Lower level, Learning Café

Learning Commons

Each campus provides a library, tutoring services, technology/open computer lab, and media services,

which collectively are referred to as the Learning Commons, to offer a full range of library, academic computing, and educational media support for students and faculty.

Each campus Learning Commons provides access to a variety of resources and information – librarians to assist with research, course materials placed on reserve by instructors, study spaces, computer labs, laptops and equipment loans. Tri-C’s college-wide catalog can be used to browse a collection of more than 170,000 books, periodicals, newspapers, and non-print media, materials from local libraries, and academic resources throughout the state of Ohio.

The open computer lab provides access to the latest learning technologies – computers, academic software, network resources, and information services. The Learning Commons staff is available to help with College-related computer applications, and software tutors are available Monday through Saturday. Each campus’ Learning Commons provides a wide variety of media-support services including access to and setup of equipment for classrooms and events.

Student-Faculty Conferences

Tri-C faculty members maintain scheduled office hours to confer with students regarding class work and related matters. Office hours will be announced by instructors in their classes and posted outside of faculty offices. 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 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 MUREP Aerospace Academy formerly known as the Science, Engineering, Math, and Aerospace Academy Program. 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. College Pathway Programs offers programs for adults and youth. Individual programs are further described below. Visit the CPP website at: <http://www.tri-c.edu/pathways>.

Tri-C’s College Pathway Programs all share common goals:

- To increase educational opportunities for youth,

- To assist students in gaining access to higher education,
- To motivate students to participate in college courses while in high school, and
- To provide opportunities to foster student success through interventions such as assessment, coaching, and mentoring.

Strategic partnerships with area school districts enable College Pathway Programs to customize academic and student support services to meet the needs of students from diverse backgrounds. Cuyahoga Community College is committed to personal and educational excellence through its affordable and efficient approach to higher education.

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.

The College Success Program

The College Success Program 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 courses, costing them additional time and money and making it less likely that they will finish college. The College Success 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. College Success 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 currently funded by Cuyahoga Community College. For more information, please call 216-987-4196.

Educational Talent Search

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)

High Tech Academy is an innovative 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 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, health careers, and creative arts technology. Ultimately, the college-level classes count toward a students' graduation requirements in high school. This educational collaboration coordinates programming for more than 250 CMSD high school students annually. Set apart from traditional College Credit Plus, the High Tech Academy offers many enrichment components to foster achievement, career exploration, and has a required community service component. CMSD and Tri-C administrators are on-hand daily to oversee the small school operations on campus.

Founded in 2000, HTA received major support from National City and NASA Goddard Space Flight Center. Now, with generous and continuous support from PNC, HTA students are afforded unique opportunities and experiences, to accompany tuition costs that are paid on their behalf. Funding received from additional corporate sponsors Kaiser Permanente Foundation and the Harold C. Schott Foundation supports our students who are aligned with the Health Careers Pathway. Their wonderful gift assists students' pursuit of academic credentials necessary for careers in the healthcare industry.

Upon high school graduation, HTA seniors have an opportunity to apply for the HTA Completion Scholarship, established for those students who would like to continue at Tri-C after high school graduation to

Academic Information

earn an associate degree. Other students transfer to four-year colleges/universities or enter the workforce. HTA has enrolled more than 900 students who've earned college credits, and those who've earned an associate degree at the same time they earned their high school diploma now exceeds 50 students. For more information regarding the High Tech Academy, please call 216-987-3549.

MUREP Aerospace Academy

MUREP Aerospace Academy (MAA), formerly known as 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). MAA'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 at no cost to parents during the academic session (fall, spring, and summer) at Cuyahoga Community College. During the summer session, students engage in two weeks of STEM enrichment activities.

Focusing on aerospace and earth science, all students enrolled during fall, spring, and summer are engaged in StarLab (portable planetarium) and field trip activities. Middle and high school students are engaged in learning activities in the MAA Aerospace Education Laboratory, a state-of-the-art, computerized classroom that uses cutting-edge technologies to model real-world challenges in aviation, robotics and microgravity research. While students are attending the academic session, parents and guardians are invited to participate in the Family Café where parents and family members experience interactive STEM hands-on activities, lessons, parenting skills, and guest speaker presentations that support whole family learning that prepare students for college or technical fields. This forum encourages parents to share best practices of effective ways to support students interested in STEM fields.

Established as the first joint venture with NASA and Congress, the MAA program has grown from a single site to a national organization that serves 1,200 students during the academic year and summer session at the Metropolitan Campus. The program is supported by NASA MUREP Aerospace Academy, NASA Glenn Research Center, Cuyahoga Community College, Paragon TEC. Inc., Martha Jennings Foundation, PPG Industries Foundation, Thomas H. White, Cleveland Chapter of CHUMs, Time Warner Cable, and DuneCraft. For more information regarding MAA, please call 216-987-6301 or visit www.tri-c.edu/murep.

Upward Bound (UB)

Upward Bound 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: <http://www.tri-c.edu/trio-programs/upward-bound/index.html>.

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, and mathematics 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 216-987-4956 or visit www.tri-c.edu/ubms.

Innovative and Emerging Programs

Gateway to College

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 Cuyahoga Community College, Caplan Wright Family Foundation, and the United Black Fund. For more information, please call 216-987-0244.

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 Transfer Program

The Central State University Project is a partnership between Cuyahoga Community College and Central State University located in Wilberforce, Ohio. Student participants are urged to complete their associate degree 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. Scholarships are available for eligible students. For more information, please call 216-987-3260.

Adult-Focused Programs

Adult Diploma Program

The Adult Diploma Program will offer adults, age 22 or older, and an opportunity to earn a high school diploma. This will involve career advisement, a national career readiness certificate, and preparation for in-demand careers in Northeast Ohio that require a high school diploma. Participants will complete their Ohio high school diploma requirements by participating in a competency-based learning program which will demonstrate a mastery of skills that will prepare them for in-demand career fields such as healthcare, manufacturing, logistics, and constructions. There is no cost to participants except time and commitment. Cuyahoga Community College, with funding from the Ohio Department of Education, launched this two-year program in July of 2015. For additional information, please contact our program manager at 216-987-0610 or adulthoodprogram@tri-c.edu. Information may also be found at www.tri-c.edu/adulthood.

Hispanic / Latino Engagement

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

Inter-Faith Community Service Initiative

The goal of this College-wide 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 and focus to finish high school, GED, college, or workforce programs. For more information, please call 216-987-0496.

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 216-987-3260.

Educational Opportunity Center (EOC)

Educational Opportunity Center offers free enrollment assistance to 1,200 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, and identify marketable skills and career opportunities.

For FY 17, the Women In Transition Program is funded by Cuyahoga Community College, Carl D. Perkins Act, Westfield Insurance Foundation, The SK Wellman Foundation, the Peoples Bank, and others. There is both a day and evening class available. The class runs every eight weeks during the school year on four Cuyahoga Community College campuses: Eastern 216-987-2272; Metropolitan 216-987-4187; Westshore 216-987-3899; and Western 216-987-5091. Visit WIT on the web at www.tri-c.edu/wit.

Adult College Access Programs

ABLE (Adult Basic and Literacy Education)

The ABLE program offers free classes to adults who need help acquiring the skills to be successful in college, training or employment. Classes are offered to:

- Improve math, reading and writing skills;
- Help high school graduates who need to improve skills for a job or college;
- Assist with GED® test preparation;
- Improve English for speakers of other languages (ESOL);
- Transition students into a job, training or college.

Our morning and evening classes are offered at Eastern, Western and Metropolitan campuses as well as many locations within Cuyahoga County. The program is for adults 16 and older who have skills below a 12th grade level.

Please note: The state is changing requirements for 16 and 17 year old students taking the Official GED® test. This means that if you enroll in ABE at 16 or 17 years old you may not be able to reach your end goal of obtaining your high school equivalency diploma. Please review age requirements at <http://education.ohio.gov/Topics/Testing/Ohio-Options-for-Adult-Diploma/GED/Applying-for-the-GED>.

ABLE is a part of the University System of Ohio and is funded by federal and state grants through the Ohio Department of Higher Education.

For more information or to register visit <http://www.tri-c.edu/able-ged-esol/ableged-registration.html> or call:
Metro Campus: 216-987-3029
Eastern Campus: 216-987-2135
Eastern Suburbs and Cleveland East: 216-371-7138 or 216-261-5006
Western Suburbs and Cleveland West: 216-529-4240

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. DD214 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:

<http://www.tri-c.edu/veterans/veterans-upward-bound>.

NOTES

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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.

Essential Learning Statement of Purpose

Essential Learning refers to that broad body of knowledge and skills common to all educated people, regardless of their professions. A essential learning 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 Essential Learning curriculum of Cuyahoga Community College prepares students for a more fulfilling life.

Essential Learning 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:

Oral Communication

Demonstrate effective verbal and non-verbal communication for an intended audience that is clear, concise, organized, and delivered following the standard conventions of that language.

Written Communication

Demonstrate effective written communication for an intended audience that follows genre/disciplinary conventions that reflect clarity, organization, and editing skills..

Critical/Creative Thinking

Analyze, evaluate, and and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Information Literacy

Acquire, evaluate, and use information from credible sources in order to meet information needs for a specific research purpose.

Quantitative Reasoning

Analyze problems, including real-world scenarios, through the application of mathematical and numerical

concepts and skills, including the interpretation of data, tables, charts, or graphs.

Cultural Sensitivity

Demonstrate sensitivity to the beliefs, views, values, and practices of cultures within and beyond the United States.

Civic Responsibility

Analyze the results of actions and inactions with the likely effects on the larger local and/or global communities.

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 degree or the Associate of Science 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 of this Catalog.

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-1001 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 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-2830
Geography	Political Science
JMC-1011	Psychology
JMC-1410	Sociology
JMC-1610	Urban Studies
JMC-2000	WST-2010
JMC-2010	WST-2120
	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 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-2030	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 VI 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 (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 *
- ENG-1020 or ENG-102H College Composition II

* 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 (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 (15 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:

- Fifteen (15) semester credits selected from the following course and 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-2830
Education	Political Science
Geography	Psychology
JMC-1011	Sociology
JMC-1410	Urban Studies
JMC-1610	WST-2010
JMC-2000	WST-2120
JMC-2010	WST-2850
JMC-2220	

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

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-2020

- 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 VI for listing of cross-listed courses.)

Associate of Applied Business Degree and Associate of Applied Science Degree

The Associate of Applied Business degree and Associate of Applied Science 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 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.

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-1001, 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 2 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, EMT-1401, 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	MUS-1010
ART-1040	MUS-1020
ART-2020	MUS-1030
ART-2030	MUS-1040
DANC-1100	MUS-1050
English 2000-level literature courses	MUS-2030
Foreign Languages	MUS-2500
History	MUS-2510
Humanities	MUS-2520
JMC-1310	MUS-2530
JMC-2040	

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 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 12 to 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 VI 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.

Communication/Mathematics/Natural & Physical Sciences (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-1001, and English as a Second Language courses):

American Sign Language
 ANTH-1210
 Biology
 Chemistry
 DIET-1200
 Earth Science
 English
 Foreign Languages
 Mathematics
 MT-1242, MT-1272, MT-1280
 Physical Sciences
 Physics
 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/Mathematics/Natural & Physical Sciences 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:

Degree and Certificate Program Requirements

- Select six (6) semester credits from at least 2 of the following areas, with a minimum of 3 credits in each area:

Natural and Physical Sciences

ANTH-1210

Biology

Chemistry

The following courses from non-science subject areas can be counted toward this requirement for the Associate of Applied Science degree: DIET-1200, EMT-1401, 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-2030

ART-1010

MUS-2500

ART-1040

MUS-2510

ART-2020

MUS-2520

ART-2030

MUS-2530

DANC-1100

MUS-2540

English 2000-level

MUS-2550

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-2030

MUS-1050

- 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 Catalog.

Approximately one-half of each Associate of Applied Science program requirements must include a minimum of

Earth Science

Physical Science

Physics

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 12 to 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 VI 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-1001, 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:

Degree and Certificate Program Requirements

- Select six (6) semester credits from at least 2 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 Technical Studies 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-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 VI 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.

Certificates will be automatically awarded when the certificate requirements are completed. Students who do not want to receive an earned certificate must notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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 or higher degree 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.

NOTES



General Curriculum Information

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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 three (3) years in which to complete their degree or certificate program requirements. If the student has not completed the degree in a 3-year period, the student must satisfy requirements of a Catalog-in-Force within the most recent 3 years. Three exceptions to this exist:

1. The College may, by notification to the student, determine different requirements if the student has not completed the declared program in a three-year period.
2. 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.
3. A student who has been away from the College for two consecutive semesters, including summer session, (i.e. Fall and Spring OR Spring and Summer OR Summer and Fall) 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 Registrar 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, 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.

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 V.

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 VI.

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 Department of Higher Education 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).

Ohio Transfer Module (OTM)

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 complete some individual Ohio Transfer Module courses within their degree program or continue beyond the degree program to complete the entire Ohio 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. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. 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. More information is available at:

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

Transfer Assurance Guides (TAGs)

Transfer Assurance Guides (TAGs) comprise Ohio Transfer Module courses and additional courses required for an academic major called TAG courses. A TAG is an advising tool to assist Ohio university and community and technical college students in planning specific majors and making course selections that will ensure comparable, compatible, and equivalent learning experiences across Ohio’s public higher-education system. A number of area-specific TAG pathways in meta-majors including the arts, humanities, business, communication, education, health, mathematics, science, engineering, engineering technologies, social sciences and foreign languages have been developed by faculty teams. TAGs empower 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. Students may elect to complete the full TAG or any subset of courses from the TAG. Because of specific major requirements, early identification of the intended major is encouraged. Additional information on specific Transfer Assurance Guides can be found on the Ohio Department of Higher

General Curriculum Information

Education website:

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

Career-Technical Assurance Guides (CTAG)

Career-Technical Assurance Guides (CTAGs) are statewide articulation agreements that guarantee the recognition of learning which occurs at public adult and secondary career-technical institutions and have the opportunity for the award of college-credit toward technical courses/programs at any public higher education institution. CTAGs serve as advising tools, identifying the statewide content guarantee and describing other conditions or obligations (e.g. program accreditation or industry credential) associated with guarantee.)

Additional information is available at:

<https://www.ohiohighered.org/transfer/ct2>

One-Year Option Credit Award

The One-Year Option builds upon Ohio's articulation and transfer system to help more adults accelerate their preparation for work by earning a technical associate degree. Consistent with the philosophy of the Career-Technical Assurance Guides (CTAGs), the One-Year Option guarantees that college credit will be awarded for college-level learning that occurs through adult programs at public career-technical institutions.

Adults who complete a career-technical education program of study consisting of a minimum of 900 clock-hours and achieve an industry-recognized credential approved by the Ohio Chancellor shall receive 30 semester hours of technical course credit toward a standardized Associate of Technical Study Degree (ATS) upon matriculation at a public institution of higher education that confers such a degree. The 30 semester hours will be awarded as a block of credit rather than credit for specific courses. Proportional credit is to be awarded toward the ATS degree for adults who complete a program of study between 600 and 899 clock hours and achieve an industry-recognized credential approved by the Chancellor. Additional information and approved pathways and credentialing requirements can be found at:

https://ohiohighered.org/content/one_year_option_stud ents.

Military Transfer Assurance Guides (MTAGs)

The Ohio Department of Higher Education Actuation and Transfer Network has begun the process of developing MTAGs to streamline and systemize the awarding of credit for military training, experience, and coursework. MTAGs identify specific courses which are part of the statewide transfer guarantee. See Appendix IV, for more information on the Military Transfer Assurance Guides. Additional information can also be found on the Ohio Department of Higher Education website:

https://www.ohiohighered.org/valuing_ohio_veterans/toolkit/awarding-credit/transfer-guarantees.

Ohio Articulation Number (OAN)

Pre-major courses that represent the commonly accepted pathway to majors within the bachelor's degree 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 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 College's OAN approved courses can be found at

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

Apprenticeship Pathway Programs

The Apprenticeship Pathways initiative advocates for individuals completing apprenticeships by incorporating their learning into academic credit, thereby saving them time and money and encouraging them to advance their academic credentials to contribute to a strong workforce.

Ohio apprenticeship programs partner with public two-year institutions to provide technology-specific statewide articulation agreements that recognize non-traditional prior learning. College credit is awarded toward a technical associate degree. Each agreement simplifies student advising by outlining how apprenticeship training in a certain pathway applies to an applied associate degree and lists remaining courses required to complete the degree. The application of the credit toward a technical associate degree in these agreements is guaranteed at the participating receiving institutions. More information and approved pathways can be found at:

<https://www.ohiohighered.org/transfer/apprenticeship-pathways>.

Conditions for Transfer Admission

1. Graduates with associate degrees from Ohio's public institutions of higher education and a completed, approved Ohio Transfer Module shall be admitted to a public institution of higher education in Ohio, provided their cumulative grade-point average is at least 2.0 for all previous college-level courses. Further, these students shall have admission priority over graduates with an out-of-state associate degree and other transfer students with transferable and/or articulated college credit.
2. Associate degree holders who have not completed the Ohio Transfer Module from an Ohio public institution of higher education will be eligible for preferential consideration for admission as transfer students as long as the institution's admission criteria, such as the minimum academic standards, space availability, adherence to deadlines, and

payment of fees, are fairly and equally applied to all undergraduate students.

3. In order to encourage completion of the baccalaureate degree, students who are not enrolled in or who have not earned an degree but have earned 60 semester/90 quarter hours or more of credit toward a baccalaureate degree with a cumulative grade-point average of at least a 2.0 for all previous college-level courses will be eligible for preferential consideration for admission as transfer students as long as the institution's admission criteria, such as the minimum academic standards, space availability, adherence to deadlines, and payment of fees, are fairly and equally applied to all undergraduate students.
4. Students who have not earned an associate degree or who have not earned 60 semester/90 quarter hours of credit with a grade-point average of at least a 2.0 for all previous college-level courses will be eligible for admission as transfer students on a competitive basis.
5. Incoming transfer students admitted to a college or university shall compete for admission to selective programs, majors, and units on an equal basis with students native to the receiving institution.

The admission of transfer students by an institution, however, does not guarantee admission to any majors, minors, or fields of concentration at the institution. Some programs have additional academic and non-academic requirements beyond those for general admission to the institution (e.g., background check, a grade-point average higher than a 2.0, or a grade-point average higher than the average required for admission to the institution). Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as native students. Furthermore, transfer students shall be accorded the same class standing and other privileges as native students on the basis of the number of credits earned. All residency requirements must be completed at the receiving institution.

Responsibilities of Students

To maximize transfer credit application, prospective transfer students must take responsibility for planning their course of study to meet both the academic and non-academic requirements of the institution to which they desire to articulate or transfer credit as early as possible. The student is responsible to investigate and use the information, advising, and other available resources to develop such a plan. Students should actively seek program, degree, and transfer information; meet with an advisor from both the current and receiving institutions to assist them in preparing a course of study that meets the academic requirements for the program/degree to which

they plan to transfer; use the various electronic course/program transfer and applicability database systems, including Ohio Transfer to Degree Guarantee web resources; and select courses/programs at their current institution that satisfy requirements at the receiving institution to maximize the application of transfer credit. 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 foreign language requirements or any special course requirements that can be met during the freshman or sophomore year. This will enable students to plan and pursue a course of study that will better articulate with the receiving institution's major.

Appeals Process

Following the evaluation of a student transcript from another institution, the receiving college institution will provide the student with a Statement of Transfer and Articulated Credit Applicability (Degree Audit Report). A student disagreeing with the application of transfer and/or articulated credit by the receiving institution must file his/her appeal in writing within ninety (90) days of receipt of the Statement of Transfer and Articulated Credit Applicability. The institution shall respond to the appeal within thirty (30) days of the receipt of the appeal at each appeal level.

Student Complaints Following Transfer Appeals at the Receiving Institution

After a student exhausts the appeals process at the receiving institution and chooses to pursue further action, the Ohio Department of Higher Education (ODHE) responds to formal written complaints related to Ohio Articulation and Transfer Policy against public, independent non-profit, and proprietary institutions of higher education in Ohio. While the ODHE has limited authority over colleges and universities and cannot offer legal advice or initiate civil court cases, staff will review written complaints submitted through its established process and work with student complainants and 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

General Curriculum Information

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 credits will be transferred. 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.

Transition to New Math Curriculum

In order to provide students enrolled prior to Fall 2016 with an appropriate transition period for to the state-mandated changes in the College's mathematics curriculum, the following "grandfathering" time periods have been established:

- **For Graduation:** MATH-1141, 1200, and 1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet the College's Math Requirement for graduation through Summer 2021.
- **For Admission to Selective Admission Programs:** For students admitted to begin these programs prior to Fall 2019, MATH-1141, 1200 or 1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will be accepted to meet the Math requirements for admission to these programs.

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. Also 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 216-987-4247 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 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.

Transition to New Math Curriculum

In order to provide students enrolled prior to Fall 2016 with an appropriate transition period for to the state-mandated changes in the College's mathematics curriculum, the following "grandfathering" time periods have been established:

- **For Graduation:** MATH-1141, 1200, and 1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet the College's Math Requirement for graduation through Summer 2021.
- **For Admission to Selective Admission Programs:** For students admitted to begin these programs prior to Fall 2019, MATH-1141, 1200 or 1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will be accepted to meet the Math requirements for admission to these programs.

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.

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
- MATH-0955 Beginning Algebra or appropriate score on math placement test to enroll in MATH-1240.

Other Information:

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

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 with fiduciary responsibility to pursue the corporate objectives 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 business transactions culminating with a complete set of financial statements.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record daily accounting tasks, analyze business results, forecast future activity levels and provide proforma projections of financial results and financial position.
5. Recognize when inaccuracies or other issues arise, including weaknesses in internal controls and ethical lapses that impact presentation of business results and operating activities, research alternatives, and proactively suggest solutions.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ACCT-1310	Financial Accounting	4
ACCT-1041	Individual Taxation	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	-
		17

<u>Second Semester</u>		<u>Credits</u>
ACCT-1340	Managerial Accounting	4
ACCT-1520	QuickBooks Immersion	2
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
MATH-1240	Contemporary Mathematics or higher ¹	3
PHIL-1020	Introduction to Logic	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
BADM-2150	Business Law	4
ECON-2610	Principles of Macroeconomics	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
ACCT-xxxx	Accounting Elective ² ... OR	2 - 4
FIN-xxxx	Finance Elective	2 - 4
DEGR-xxxx	General Elective	<u>1</u>
		14 - 16

<u>Fourth Semester</u>		<u>Credits</u>
ACCT-2995	Accounting Technology C	3
ACCT-2xxx	Accounting 2000 level elective	4
ECON-2620	Principles of Microeconomics	4
FIN-2100	Financial Management	<u>3</u>
		14

PROGRAM TOTAL 60 - 62

¹Recommend MATH-1470 or higher for students planning to transfer to a 4 year college.

²ACCT-1011 and ACCT-1020 cannot be used to fulfill elective requirements.

C = Capstone course.

ELECTIVES

<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-2830	Cooperative Field Experience	1 - 3
ACCT-28xx	Accounting Special Topics	2 - 4
FIN-1061	Personal Finance	3

BOOKKEEPING CERTIFICATE

Certificate of Proficiency

The Bookkeeping Certificate prepares students for entry level employment as bookkeeping clerks. This 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 as a bookkeeper or office manager for a small or medium sized business. Students may apply credits earned in the Bookkeeping Certificate toward an Associate of Applied Business degree in Accounting.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Communicate financial 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 pursue the corporate objectives in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental bookkeeping processes to properly record routine and nonroutine business transactions.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record daily bookkeeping tasks.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
ACCT-xxxx	Any ACCT elective course	3 - 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	3
		16 - 17
<u>Second Semester</u>		<u>Credits</u>
ACCT-1030	Payroll	3
ACCT-1520	QuickBooks Immersion	2
ACCT-xxxx	Any ACCT elective course ¹ ... OR	3 - 4
FIN-xxxx	Finance Elective	3 - 4
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	3
BADM-2150	Business Law	4
		15 - 16
	PROGRAM TOTAL	31 - 33

Electives

Select from below courses to fulfill elective requirement.

		<u>Credits</u>
ACCT-1011	Business Math Applications	3
ACCT-1340	Managerial Accounting	4
ACCT-2310	Intermediate Accounting I	4
ACCT-2500	Governmental/Non-Profit Accounting	4
ACCT-2320	Intermediate Accounting II	4
ACCT-2340	Cost Accounting	4
ACCT-2830	Cooperative Field Experience	1 - 3
ACCT-28xx	Accounting Special Topics	2 - 4
FIN-1061	Personal Finance	3
FIN-2100	Financial Management	3

¹ACCT-1020 cannot be used to fulfill elective requirements.

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

PAYROLL (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ACCT-1310	Financial Accounting	4
ACCT-1041	Individual Taxation	4
BADM-1020	Introduction to Business	3
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
		17
<u>Second Semester</u>		
ACCT-1030	Payroll	3
ACCT-1520	QuickBooks Immersion	2
ACCT-xxxx	Any ACCT elective course ¹ ... OR	3 - 4
FIN-xxxx	Finance Elective	3 - 4
BADM-2150	Business Law	4
BADM-2010	Business Communications ... OR	3
BADM-2010	Business Communications	3
		15 - 16
	PROGRAM TOTAL	32 - 33

¹ACCT-1020 cannot be used to fulfill elective requirement.

<u>Elective</u>		<u>Credits</u>
Choose one elective from the following courses.		
ACCT-1011	Business Math Applications	3
ACCT-1340	Managerial Accounting	4
ACCT-2041	Business Taxation	4
ACCT-2310	Intermediate Accounting I	4
ACCT-2500	Governmental/Non-Profit Accounting	4
ACCT-2830	Co-op Experience	2 - 3
FIN-1061	Personal Finance	3

TAX PREPARATION

Certificate of Proficiency

The Tax Preparation Certificate prepares students for entry-level employment as tax preparation paraprofessionals. Such tax preparers may be responsible for completing small business income tax returns, individual income tax returns, and payroll tax returns. This 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 as a tax preparer. Students may apply credits earned in the Tax Preparer Certificate toward an Associate of Applied Business degree in Accounting.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Communicate tax preparation 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 prepare taxes in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental tax preparation processes to properly prepare small business income-tax returns, individual income tax returns, and payroll tax returns.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary tax preparation software to record and prepare small business income tax returns, individual income tax returns, and payroll tax returns.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ACCT-1041	Individual Taxation	4
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	-
		17
<u>Second Semester</u>		
ACCT-1030	Payroll	3
ACCT-2041	Business Taxation	4
ACCT-2050	Volunteer Income Tax Assistance	2
BADM-2010	Business Communications ... OR	3
BADM-201H	Honors Business Communications	
BADM-2150	Business Law	4
		16
	PROGRAM TOTAL	33

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.

The rapid growth of technology has special implications for the Department of Administrative Office Systems (AOS). The needs of both students and employers are changing as the office environment becomes more automated. To meet this challenge, office personnel should develop traditional office skills while using the newest office technology. Employers in today's business climate need employees who possess excellent technical skills and a solid background in communications. These skills are required to successfully interact with clients/customers and coworkers.

The department addresses this challenge by students and employers. It provides the necessary knowledge, skills, and attitudes needed by office professional to integrate office resources of people and technology.

Program Admissions Requirements:

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

Other Information

- Certificates available in Basic Office Skills, Legal Administrative Specialist, Medical Administrative Specialist, Microsoft Office Application Specialist, Office Operations Management, and Virtual Office Assistant.
- Non-degree students may enroll for individual courses, provided that 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

First Semester		Credits
BADM-1000	Business Language Skills	2
BADM-1020	Introduction to Business	3
IT-1000	Keyboarding ¹	2
IT-1030	Internet Fundamentals	2
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	
		15

Second Semester		Credits
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	
MATH-1xxx	1000-level MATH course or higher	3
		15 - 17

Third Semester		Credits
AOS-2200	Word Processing II	3
AOS-2220	Electronic Spreadsheet Use and Design	3
AOS-2210	Presentation Software (a)... OR	3
AOS-2250	Virtual Assistant/Virtual Cyber Office (e) ...OR	3
BADM-1050	Professional Success Strategy (b) ... OR	3
C&CR-1350	Legal Terminology (d)... OR	3
MA-2010	Medical Terminology II (c)	2
AOS-2410	Office Management	3
	Communication (See AAB degree requirements)	3
	Arts & Hum (See AAB/AAS degree requirements)	3
		17 - 18

Fourth Semester		Credits
ACCT-1011	Business Math Applications	3
AOS-2270	Desktop Publishing (a)(d)(e) ... OR	3
BADM-1070	Introduction to Project Management (b)... OR	
HIM-1121	Medical Billing Practices (c)	2
AOS-2830	Cooperative Field Experience	1
AOS-2990	Office Procedures and Practices C	3
	Soc and Beh Sci (See AAB/AAS degree requirements)	3
		12 - 13

PROGRAM TOTAL 61 - 63

¹Credit may be earned by successful completion of credit by exam.

C = Capstone course.

(continued on next page)

Program Sequences

ADMINISTRATIVE OFFICE SYSTEMS (Continued)

OPTIONS

<u>(a) Administrative Office Specialist</u>		<u>Credits</u>
AOS-1220	Speed Building	2
AOS-2210	Presentation Software	3
AOS-2270	Desktop Publishing	3
PROGRAM TOTAL – OPTION A		61

<u>(b) Office Operations Management</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
BADM-1070	Introduction to Project Management	3
BADM-1121	Principles of Management and Organizational Behavior	4
PROGRAM TOTAL – OPTION B		63

<u>(c) Medical Administrative Specialist</u>		<u>Credits</u>
HIM-1121	Medical Billing Practices	2
MA-1020	Medical Terminology I	3
MA-2010	Medical Terminology II	2
PROGRAM TOTAL – OPTION C		60

<u>(d) Legal Administrative Specialist</u>		<u>Credits</u>
AOS-2270	Desktop Publishing	3
C&CR-1350	Legal Terminology	3
PL-1501	Law Office Technology	2
PROGRAM TOTAL – OPTION D		61

<u>(e) Virtual Assistant</u>		<u>Credits</u>
AOS-2250	Virtual Assistant/Virtual Cyber Office	3
AOS-2270	Desktop Publishing	3
BADM-1300	Small Business Management	4
PROGRAM TOTAL – OPTION E		63

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
AOS-1241	Records Management	3
IT-1000	Keyboarding ¹	2
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
IT-1060	Introduction to Windows	<u>2</u>
		12

<u>Second Semester</u>		<u>Credits</u>
AOS-1201	Word Processing I	<u>4</u>
		4

PROGRAM TOTAL 16

¹Credit may be earned by successful completion of credit by exam.

LEGAL ADMINISTRATIVE SPECIALIST

Certificate of Proficiency

The Legal Administrative Specialist Certificate of Proficiency offers coursework that develops skills and knowledge specific to the legal industry. Students may apply credits earned in the Legal Administrative Specialist Certificate toward an Associate of Applied Business degree in Administrative Office Systems.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 legal office protocol.
3. Communicate verbally and in writing to co-workers, clients and other professionals using proper media and legal terminology.
4. Determine and use various office applications software to develop document, and manage legal office project, procedures and systems.
5. Organize time and resources to manage day-to-day operations that meet legal office guidelines and goals.

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	—
		6

<u>First Semester</u>		<u>Credits</u>
AOS-1201	Word Processing I	4
BADM-2010	Business Communications ...OR	3
BADM-201H	Honors Business Communications	
C&CR-1350	Legal Terminology	3
IT-1000	Keyboarding ¹	2
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	—
		15

<u>Second Semester</u>		<u>Credits</u>
AOS-1241	Records Management	3
AOS-2220	Electronic Spreadsheet Use and Design	3
AOS-2270	Desktop Publishing	3
AOS-2410	Office Management	3
PL-1501	Law Office Technology	2
		14

PROGRAM TOTAL 35

¹Credit may be earned by successful completion of credit by exam.

MEDICAL ADMINISTRATIVE SPECIALIST

Certificate of Proficiency

The Medical Application Specialist Certificate of Proficiency prepares students for careers in the medical administration area. Skill sets in medical terminology combine with administration coursework to prepare students for careers in a medical office setting. Students may apply credits earned in the Medical Administrative Specialist Certificate toward an Associate of Applied Business degree in Administrative Office Systems.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

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

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BADM-1020	Introduction to Business	3
IT-1000	Keyboarding ¹	2
		5

<u>First Semester</u>		<u>Credits</u>
AOS-1201	Word Processing I	4
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	3
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	3
MATH-1xxx	1000-level MATH course or higher	3
MA-1020	Medical Terminology I	3
		16

<u>Second Semester</u>		<u>Credits</u>
AOS-1241	Records Management	3
AOS-2410	Office Management	3
BADM-2010	Business Communications ...OR	3
BADM-201H	Honors Business Communications	3
HIM-1121	Medical Billing Practices	2
MA-2010	Medical Terminology II	2
		13

PROGRAM TOTAL 34

¹Credit may be earned by successful completion of credit by exam.

MICROSOFT OFFICE APPLICATION SPECIALIST

Short-Term Certificate

This short-term certificate provides knowledge and skills in preparation for the Word, Excel, Access and PowerPoint MOS (Microsoft Office Specialist) exams. Enrollees in this certificate program will acquire competencies in advanced word processing, spreadsheet design and use, presentation software, and database maintenance. Students may apply credits earned in the Microsoft Office Application Specialist Certificate toward an Associate of Applied Business degree in Administrative Office Systems.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Determine and use various office applications software to develop, document, and manage office project, procedures and systems.
2. Work independently and collaboratively in order to meet the goals of an organization.
3. Demonstrate professionalism and a solid work ethic within communications and work activities.
4. Build spreadsheet solutions in Microsoft Excel to automate manual or outdated processes.
5. Build and maintain databases in Microsoft Access in order to track and manage data.
6. Design, create, maintain, and enhance presentations in Microsoft PowerPoint in order to deliver ideas and information.
7. Create, edit, enhance and review documents in Microsoft Word.

Suggested Semester Sequence		Credits
<u>Summer Session</u>		
IT-1000	Keyboarding ¹	2
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	5
<u>First Semester</u>		
AOS-1201	Word Processing I	4
AOS-2220	Electronic Spreadsheet Use and Design	3
AOS-2210	Presentation Software	3
IT-2300	Database Use and Design	3
		13
<u>Second Semester</u>		
AOS-2200	Word Processing II	3
		3
	PROGRAM TOTAL	21

¹Credit may be earned by successful completion of credit by exam.

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence		Credits
<u>First Semester</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-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>		
AOS-1201	Word Processing I	4
AOS-1241	Records Management	3
AOS-2220	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	3
		17
	PROGRAM TOTAL	35

¹Credit may be earned by successful completion of credit by exam.

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Session</u>		
ACCT-1011	Business Math Applications	3
AOS-2220	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>		
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	<u>3</u>
		12
 <u>Second Semester</u>		
AOS-2250	Virtual Assistant/Virtual Cyber Office	3
AOS-2270	Desktop Publishing	3
AOS-2990	Office Procedures and Practices	<u>3</u>
		9
	 PROGRAM TOTAL	 33

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 with a concentration in Bricklaying & Allied Crafts. 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Bricklaying & Allied Crafts) (Continued)

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
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

<u>Second Semester</u>		<u>Credits</u>
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

<u>Third Semester</u>		<u>Credits</u>
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	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	3
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

<u>Fourth Semester</u>		<u>Credits</u>
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.

<u>Construction Engineering Technology 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
CNST 2631	Construction Management Systems	3
CNST 2990	Construction Estimating & Cost Analysis	3

<u>Related Business & Management Electives</u>		<u>Credits</u>
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 Associate of Applied Science degree with a concentration in Bricklaying 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Bricklaying & Applied Crafts. Please see learning outcomes listed under Bricklaying & Applied Crafts for certificate outcomes.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
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
		<u>16</u>
<u>Second Semester</u>		<u>Credits</u>
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
		<u>9</u>
<u>Summer Session</u>		<u>Credits</u>
ATBL-2510	Advanced Brick-Block Construction	2
ATBL-2710	Advanced Bricklaying Skills	3
		<u>5</u>
	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:

- Eligibility for MATH-0955 or ENG-0910 with grade of "C" or higher.

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

<u>First Semester</u>		<u>Credits</u>
AIT-1010	Construction Measurements and Calculations	4
AIT-1020	Comprehension and Communication for Construction	2
AIT-1030	Basic Construction Language	2
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
		<u>17</u>
	PROGRAM TOTAL	17

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. Department of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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, and 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
	Soc & Beh 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

C = Capstone course.

<u>ATCT Electives</u>		<u>Credits</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

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. Department of Labor, Bureau of Apprenticeship and Training

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Carpentry. Please see learning outcomes listed under Carpentry for certificate outcomes.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</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	2
		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	2
		14

<u>Summer Session</u>		<u>Credits</u>
ATCT-2341	Concrete Specialties	2
ATCT-2370	Interior Systems Layout	2
ATCT-2560	Interior Systems III	2
		6
	PROGRAM TOTAL	30

ATCT Electives

Recommended courses to fulfill the elective requirement:

		<u>Credits</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

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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Cement Masonry) (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</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	3
CNST-xxxx	CNST Elective ...OR	3
BADM-xxxx	Business Elective	3
MATH-1xxx	1000-level MATH course or higher	3
		17
<u>Second Semester</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	3
FIN-1061	Personal Finance	-
		15
<u>Third Semester</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	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	3
BADM-xxxx	Business Elective ...OR	3
CNST-xxxx	CNST Elective	3
Arts & Hum (See AAB/AAS degree requirements)		3
		16
<u>Fourth Semester</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	3
Communication (See AAS degree requirements)		3
Soc & Beh Sci/Sciences (See AAB/AAS degree requirements)		3
		15
	PROGRAM TOTAL	63

C = Capstone course.

<u>Recommended Business Electives</u>		<u>Credits</u>
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>Recommended 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

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate learning outcomes are based on attainment of journey level status in Cement Masonry. Please see learning outcomes listed under Cement Masonry for certificate outcomes.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</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	3
		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	3
		13

<u>Summer Session</u>		<u>Credits</u>
ATCM-2700	Advanced Concrete Finishing	3
		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 craftsman.
- High School Diploma/GED
- 18 years old; Valid driver's license

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
MATH-1240	Contemporary Mathematics or higher	3
		14

<u>Second Semester</u>		<u>Credits</u>
ATCW-1210	Introduction to Information Transport -Copper	2
ATCW-xxxx	Elective	2
BADM- xxxx	Business Elective ... OR	3
CNST- xxxx	CNST Elective	3
ISSET-1410	Applied Electricity I	3
IT-1010	Introduction to Microcomputer Applications	3
DEGR- xxxx	General Elective (See List Below)	3
		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
BADM- xxxx	Business Elective ... OR	3
CNST- xxxx	CNST Elective	3
DEGR-xxxx	General Elective (See List Below)	3
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		3
		15

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATCW-2070	Information Transport Circuits	1
ATCW-2120	Advanced Systems Transport	2
SPCH-1000	Fundamentals of Interpersonal Communication	3
DEGR-xxxx	General Elective (See List Below)	3
Arts & Hum (see AAB/AAS degree requirements)		3
		15

PROGRAM TOTAL 60

C = Capstone course.

ELECTIVES

<u>Recommended courses to fulfill elective requirements</u>	<u>Credits</u>	
ACCT-1011	Business Math Applications	3
BADM-1050	Professional Success Strategy	3
BADM-1300	Small Business Management	4
BADM-1210	Labor-Management Relations	3
CNST-1731	Construction Print Reading	3
CNST-2130	Construction Methods, Materials & Equipment	3
CNST-2631	Construction Management Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
ESCI-1310	Physical Geography	3
ESCI-1410	Physical Geology	3
FIN-1061	Personal Finance	3
GEN-1010	Personal Development	2
HLTH-1230	Standard First Aid and Personal Safety	1
HLTH-1100	Personal Health Education	3
SPCH-1010	Fundamentals of Speech Communication	3
DEGR-xxxx	Arts & Hum/Soc & Beh Sci/Nat & Phy Sci	

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.

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Communication Transport Systems. Please see learning outcomes listed under Communication Transport Systems for certificate outcomes.

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
DEGR-xxxx	General Elective (See List Below)	3
		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
IT-1010	Introduction to Microcomputer Applications	3
ISET-1410	Applied Electricity I	3
		14

<u>Summer Session</u>		<u>Credits</u>
ATCW-2070	Information Transport Circuits	1
ATCW-2120	Advanced Systems Transport	2
		3

PROGRAM TOTAL 30

<u>ELECTIVES</u>		<u>Credits</u>
ACCT-1011	Business Math Applications	3
BADM-1050	Professional Success Strategy	3
BADM-1210	Labor-Management Relations	3
BADM-1300	Small Business Management	4
CNST-1731	Construction Print Reading	3
CNST-2130	Construction Methods, Materials & Equipment	3
CNST-2631	Construction Management Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3

ESCI-1310	Physical Geography	3
ESCI-1410	Physical Geology	3
FIN-1061	Personal Finance	3
GEN-1010	Personal Development	2
HLTH-1230	Standard First Aid and Personal Safety	1
HLTH-1100	Personal Health Education	3
DEGR-xxxx	Any course in Arts & Humanities/Social & Behavioral Sciences/Natural & Physical Sciences	

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. Department of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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)

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	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro 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 	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

 = Capstone course.

<u>Construction Management Electives</u>	<u>Credits</u>
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

<u>Business Electives</u>	<u>Credits</u>
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. Department 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Construction Tending and Hazardous Material Abatement. Please see learning outcomes listed under Construction Tending and Hazardous Material Abatement for certificate outcomes.

(continued on next page)

Program Sequences

CONSTRUCTION TENDING AND HAZARDOUS MATERIAL ABATEMENT (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</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	2
		13
<u>Second Semester</u>		
ATLB-2650	Demolition Techniques	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
		9
<u>Summer Session</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
		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. Department of Labor, Bureau of Apprenticeship and Training.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 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>Credits</u>
<u>First Semester</u>		
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	3
MATH-1xxx	1000-level MATH course or higher	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	3
		18

Suggested Semester Sequence		<u>Credits</u>
<u>Second Semester</u>		
ATDW-1620	Taping Tools and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
BADM-xxxx	Business Elective ... OR	3
CNST-1281	Construction Engineering Orientation ... OR	3
CNST-1510	Green Building & Sustainability I	3
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
Communication...	(Select from American Sign Language, English, Foreign Language, or Speech Communication) ¹	3
		15


Suggested Semester Sequence		<u>Credits</u>
<u>Third Semester</u>		
ATDW-2350	Filling Compounds and Procedures	2
ATPT-2320	Safe Work Practices	3
BADM-xxxx	Business Elective ... OR	3
CNST-1730	Construction Print Reading	2
Arts & Hum	(see AAB/AAS degree requirements)	3
		10 - 11

(continued on next page)

APPLIED INDUSTRIAL TECHNOLOGY
(Drywall Finishing) (Continued)

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World	3
ATDW-2340	Texturing	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2360	Foreman Training	2
ATPT-xxxx	ATPT elective course	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	3
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		3
		17
PROGRAM TOTAL		60 - 61

¹ENG-2151 Technical Writing highly recommended.

 = Capstone course.

ELECTIVES

<u>Technical Electives</u>		<u>Credits</u>
Select from the following list to fulfill elective requirements:		
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

<u>Business & Supervision Electives</u>		<u>Credits</u>
Recommended courses to fulfill business electives		
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

DRYWALL FINISHING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

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

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree and certificate learning outcomes are based on attainment of journey level status in Drywall Finishing. Please see learning outcomes listed under Drywall Finishing degree for certificate outcomes.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</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>		
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 Session</u>		
ATDW-2340	Texturing	2
ATPT-2340	Blueprints II: Advanced Reading & 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 can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired 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. Department of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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-1731	Construction Print Reading ...OR	3
FIN-1061	Personal Finance ...OR	
BADM-xxxx	Business Elective	3
MATH-1xxx	1000 level or higher ¹	3
		15 - 16

<u>Second Semester</u>		<u>Credits</u>
ATEL-1310	Alternating Current Fundamentals	3
ATEL-1360	Blueprint Fundamentals - Electrical	2
IT-1010	Intro 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)	3
		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	Const Methods, Materials Equipment ...OR	3
BADM-xxxx	Business Elective	
CNST-2990	Construction Estimating & Cost Analysis... OR	3
BADM-xxxx	Business Elective	
Arts & Hum	(See AAB/AAS degree requirements)	3
		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

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

²ENG-2151 Technical Writing highly recommended.

C = Capstone course.

<u>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

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 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. Department 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Electrical Construction. Please see learning outcomes listed under Electrical Construction for certificate outcomes.

Suggested Semester Sequence		Credits
<u>First Semester</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	2
		11
<u>Second Semester</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	4
		13

<u>Summer Session</u>		<u>Credits</u>
ATEL-2510	Motor Controls	3
ATEL-2700	Electrical Instrumentation	4
		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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Floorlaying) (Continued)

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	3
IT-1010	Introduction to Microcomputer Applications ...OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
		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 Equip.	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. Department of Labor, Bureau of Apprenticeship and Training
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Floorlaying. Please see learning outcomes listed under Floorlaying for certificate outcomes.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</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	2
		10
<u>Second Semester</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	2
		14
<u>Summer Session</u>		
ATFL-2300	Ceramics II	2
ATFL-2400	Sheet Goods - Specialty Products	2
ATFL-xxxx	Floorlaying Elective	2
		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/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. Department of Labor, Bureau of Apprenticeship and Training.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 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>First Semester</u>		<u>Credits</u>
ATGL-1330	Hand Tools for Glaziers	2
ATPT-1300	Intro to Painting, Drywall Finishing & 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>		<u>Credits</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	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	
Communication	(See AAS degree requirements)	3
		17

<u>Third Semester</u>		<u>Credits</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>		<u>Credits</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

C = Capstone course.

<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

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Glazing) (Continued)

Business & Supervision Electives Credits

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

Entrepreneur Electives Credits

Recommended electives for Entrepreneur:		
BADM-1300	Small Business Management	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

Personal Finance Electives Credits

Recommended electives for Personal Finance:		
ACCT-1011	Business Math Applications	3
FIN-1061	Personal Finance	3

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. Department 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Glazing. Please see learning outcomes listed under Glazing for certificate outcomes.

Suggested Semester Sequence

<u>First Semester</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	<u>2</u>
		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	<u>-</u>
		13

<u>Summer Session</u>		<u>Credits</u>
ATGL-2340	Advanced Welding	2
ATPT-1640	Rigging and Hoisting	<u>2</u>
		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

(continued on next page)

APPLIED INDUSTRIAL TECHNOLOGY
(Ironworking) (Continued)

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. Department of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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		<u>Credits</u>
<u>First Semester</u>		
ATTW-1300	Structural Steel Concepts	2
ATTW-1310	Safety for Ironworkers	1
ATTW-1320	Steel Construction Procedures	1
ATTW-1330	Erection Concepts and Practices	3
ATTW-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	<u>3</u>
		14

<u>Second Semester</u>		<u>Credits</u>
ATTW-1600	Welding Fundamentals for Ironworkers	3
ATTW-2300	Shielded Metal Arc Welding	3
ATTW-2310	Welding Specialties	3
ATTW-2320	Welding Blueprints and Design	3
BADM-xxxx	Business Elective ...OR	3
CNST-1xxx	CNST Elective	3
Communication	(See AAS degree requirements) ¹	<u>3</u>
		18

<u>Third Semester</u>		<u>Credits</u>
ATTW-2330	Pre-Construction Planning of Specialty Applications	2
ATTW-2340	Specialty Installation Equipment	2
ATTW-2350	Ornamental Systems and Railings	2
ATTW-2360	Ornamental Applications	2
BADM-xxxx	Business Elective ...OR	3
CNST-1xxx	CNST Elective	
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	
Arts & Hum	(See AAB/AAS degree requirements)	<u>3</u>
		17

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATTW-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)	<u>3</u>
		15
PROGRAM TOTAL		64

¹ENG-2151 Technical Writing highly recommended.

C = Capstone course.

<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 & Equipment	3

Program Sequences

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. Department 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Ironworking. Please see learning outcomes listed under Ironworking for certificate outcomes.

Suggested Semester Sequence		Credits
<u>First Semester</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>		
ATIW-1400	Principles of Reinforcing Steel	2
ATIW-1410	Practical Applications of Reinforcing Steel	1
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
		15

<u>Summer Session</u>		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
ATIW-2500	Rigging and Hoisting	3
		11
PROGRAM TOTAL		33

APPLIED INDUSTRIAL TECHNOLOGY (Lifting Technologies)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Lifting Technologies

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.

Program Admission Requirements:

- High School Diploma/GED
- Participant must be an employee of Mazella Lifting Technologies

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

1. Inspect, evaluate, and report on condition of overhead cranes and rigging gear, and prioritize findings from the inspection in accordance with regulatory and industry standards.
2. Perform routine, preventative, and required maintenance, repair, and testing of overhead cranes and rigging gear in accordance with manufacturers', regulatory, and industry standards.
3. Analyze customers' needs, research existing technologies, and apply appropriate technologies to upgrade overhead cranes and rigging gear.
4. Develop, specify, and manufacture overhead cranes and specialized rigging gear to support the demands of customer applications using current communication technologies and tools.
5. Apply the Mazzella Way and integrate it into all interactions.
6. Utilize Mazzella inspection, testing, reporting, and ERP software.
7. Operate specialized equipment and utilize Mazzella manufacturing techniques for rigging gear.
8. Observe and apply quality assurance techniques and ISO quality management system, standards, and processes.
9. Practice 5S and Lean Manufacturing techniques.
10. Demonstrate effective listening, verbal, written and conflict management skills to communicate accurately and respectfully with coworkers and customers.
11. Comply with applicable internal and industry safety standards.

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**APPLIED INDUSTRIAL TECHNOLOGY
(Lifting Technologies) (Continued)**

<u>First Semester</u>		<u>Credits</u>
ATLT-1000	Orientation for Lifting Technologies	2
ATLT-1010	Industrial Safety	1
ATLT-1020	Introduction to Lifting and Rigging	2
ATLT-1040	Safety in Lifting and Rigging I	1
ATLT-1050	Rigging Geometric	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
DEGR-xxxx	General Elective (See List Below)	3
		14

<u>Second Semester</u>		<u>Credits</u>
ATLT-1030	Introduction to Wire Rope	1
ATLT-1060	Layout and Fabrication Procedures	1
ATLT-1070	Blue Print Reading for Rigging I	2
ATLT-1080	Lifting Technologies Safety Training	1
ATLT-1090	Intro to Welding for Lifting Technologies	2
MATH-1xxx	1000-level MATH course or higher	3
DEGR-xxxx	General Elective (See List Below)	3
	Communication/Mathematics/Natural Science	3
		16

<u>Third Semester</u>		<u>Credits</u>
ATLT-1100	Introduction to Inspections: Field Tablets IC3	1
ATLT-1110	Technologies in Rigging	1
ATLT-2010	Lifting Project Module	1
ATLT-2020	Proof Test Operations	1
ATLT-2040	Wire Rope Applications I	1
ATLT-xxxx	Elective (see technical elective list)	2
ATLT-xxxx	Elective (see technical elective list)	2
DEGR-xxxx	General Elective	3
	Arts & Hum/Natural Sciences	3
		15

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World	3
ATLT-xxxx	Elective (see technical elective list)	2
ATLT-xxxx	Elective (see technical elective list)	2
ATLT-xxxx	Elective (see technical elective list)	2
Soc and Beh Sci	(See AAB/AAS degree requirements)	3
DEGR-xxxx	General Elective	3
		15

PROGRAM TOTAL 60

 = Capstone course.

ELECTIVES

Select from below courses to fulfill Technical Elective Requirements.

	<u>Credits</u>	
ATLT-2050	Blue Print Reading for Rigging II	2
ATLT-2130	Overhead Crane Electrical	2
ATLT-2140	Overhead Crane Mechanical Operations	2
ATLT-2170	Overhead Crane Inspector	1
ATLT-2280	Overhead Crane Inspection Safety	2
ATLT-2500	Rigging Inspector Certification	3
ATLT-2510	Sling Fabrication - Flat Web & Chain	1
ATLT-2520	Socketing	1

Select from below courses to fulfill General Elective Requirements.

	<u>Credits</u>	
ACCT-1011	Business Math Applications	3
ACCT-1020	Applied Accounting	3
AOS-1201	Word Processing I	4
AOS-2210	Presentation Software	3
AOS-2220	Electronic Spreadsheet Use and Design	3
BADM-1020	Introduction to Business	3
BADM-1040	Principles & Practices of Customer Service	3
BADM-1070	Introduction to Project Management	3
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2110	Production/Operations Management	3
FIN-1061	Personal Finance	3
HLTH-1230	Standard First Aid and Personal Safety	1
HLTH-1100	Personal Health Education	3
IT-1000	Keyboarding	2
IT-1010	Introduction to Microcomputer Applications	3
MET-1300	Engineering Materials and Metallurgy	3
	Communication...(Select from American Sign Language, English, Foreign Language, or Speech Communication)	3
MATH-1xxx	1000-level MATH course or higher	3
DEGR-xxxx	Any course in Arts & Humanities/Social & Behavioral Sciences/Natural & Physical Sciences	

**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 Diploma/GED
- Applicants must be sponsored by a participating employer

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Manufacturing Technology) (Continued)

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATMT-1100	Manufacturing Skills I	3
ATMT-1110	Manufacturing Skills II	2
ATMT-1200	Machine Tool Theory	4
ENG-1010	College Composition I ¹ ... OR	3
ENG-101H	Honors College Composition I	
ISET-1310	Mechanical Power Transmission	2
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		17
<u>Second Semester</u>		
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	-
		14
<u>Third Semester</u>		
ATMT-2300	Advanced Manufacturing Procedures	2
ATMT-2500	Manufacturing Technology Skills II	4
ATMT-2600	CNC Programming / Operations	2
BADM-1121	Principles of Management and Organizational Behavior	4
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		<u>3</u>
		15
<u>Fourth Semester</u>		
ATMT-2620	CAM Principles	2
ATMT-2700	Manufacturing Technology Skills III	4
ATMT-2990	Manufacturing Operation Principles C	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
Arts & Hum/Soc & Beh Sci (see AAB Degree requirements)		<u>3</u>
		15
PROGRAM TOTAL		61

¹Online course offerings are available to meet these requirements.

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. Students may apply credits toward AIT (Manufacturing Technology) degree program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ATMT-1000	Mechanical and Spatial Relations	4
ATMT-1100	Manufacturing Skills I	3
ATMT-1120	Machine Operations I	<u>6</u>
		13
<u>Second Semester</u>		
ATMT-1110	Manufacturing Skills II	2
ATMT-1200	Machine Tool Theory	4
ATMT-1300	Manufacturing Procedures	2
ATMT-2120	Machine Operations II	<u>6</u>
		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

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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. 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.

9. Move and install machinery using forklifts, rigging hardware and tools in a safe, effective and efficient manner.
10. 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.
11. 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	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	3
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)		<u>3</u>
		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)		<u>3</u>
		17

<u>Fourth Semester</u>		<u>Credits</u>
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. Department of Labor, Bureau of Apprenticeship and Training.
- Intent-to-hire agreement with participating contractor.

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Millwrighting. Please see learning outcomes listed under Millwrighting for certificate outcomes.

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
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
		12
<u>Second Semester</u>		<u>Credits</u>
ATCT-1310	Carpentry Safety	2
ATMW-1720	Machinery Installation	2
ATMW-2120	Shaft Alignment	2
ATMW-2230	Millwright Pile Driver Weld II	2
ATMW-2350	Floor Conveyor	2
ATXX-xxxx	ATxx Elective Apprenticeship course	2 - 3
		12 - 13
<u>Summer Session</u>		<u>Credits</u>
ATMW-2130	Shaft Alignment II	2
ATMW-2520	Millwright Pile Driver Weld III	2
ATPD-2700	Millwright-Pile Driver Weld IV	2
		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. Department of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED

Other Information:

- Aptitude Test
- Intent-to-hire agreement with participating contractor

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

APPLIED INDUSTRIAL TECHNOLOGY
(Operating Engineers) (Continued)


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>First Semester</u>		<u>Credits</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>Second Semester</u>		<u>Credits</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	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	
Communication (See AAS degree requirements) ¹		3
		17


<u>Third Semester</u>		<u>Credits</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 (See AAB/AAS requirements)		3
		12 - 15

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World 	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.

 = Capstone course.

<u>Technical Electives</u>		<u>Credits</u>
ATOE 2650	Safety Training Passport	1
ATOE 2670	Rough Terrain Forklift Operation	2
ATOE 2680	Hazardous Material Handling and Field Safety	2

<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 Electives</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 & 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. Department of Labor, Bureau of Apprenticeship and Training.
- Aptitude test - contact Program Coordinator for information.
- Intent-to-hire agreement with participating contractor.
- High School Diploma/GED

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Operating Engineers. Please see learning outcomes listed under Operating Engineers for certificate outcomes.

(continued on next page)

Program Sequences

OPERATING ENGINEERS (Continued)

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
ATOE-1700	Paving, Tractor, Backhoe Operators	<u>3</u>
		12
<u>Second Semester</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	<u>1 - 3</u>
		12 - 14
<u>Summer Session</u>		
ATOE-2640	Advanced Grader Practice	3
ATOE-2660	Grader Safety	2
ATOE-xxxx	ATOE Elective course	<u>1 - 3</u>
		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. Department of Labor, Bureau of Apprenticeship and Training
- High School Diploma/GED
- COMPASS score: eligibility at or above ENG-1001
- COMPASS score: eligibility at or above MATH-1000
- Aptitude Test - contact program coordinator for information
- Intent-to-hire agreement with participating contractor

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the

embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 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	3
BADM-xxxx	Business Elective ...OR	3
CNST-1xxx	CNST Elective ...OR	3
ACCT-1011	Business Math Applications	3
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		18
<u>Second Semester</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	3
IT-1010	Introduction to Microcomputer Applications ...OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
		16

(continued on next page)

APPLIED INDUSTRIAL TECHNOLOGY
(Painting) (Continued)

<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)		<u>3</u>
		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)		<u>3</u>
		18

PROGRAM TOTAL 64 - 65

¹ATPT-2370 and ATPT-2380 may each be used only once.

C = Capstone course.

- Aptitude Test - contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Painting. Please see learning outcomes listed under Painting for certificate outcomes.

<u>Suggested Semester Sequence</u>		
<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	<u>2</u>
		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	<u>2</u>
		15

<u>Summer Session</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	<u>2</u>
		6
PROGRAM TOTAL		34

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. Department of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- COMPASS score: eligibility at or above ENG-1001
- COMPASS score: eligibility at or above MATH-1000

**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. Department of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>Credits</u>
<u>First Semester</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>
ATMW-2230	Millwright Pile Driver Weld II	2
ATPD-2020	Pile Driving Technologies	2
CNST-1730	Construction Print Reading	2
Communication...	(Select from American Sign Language, English, Foreign Language, or Speech Communication) ¹	3
Soc & Beh Sci/Nat Sci	(see AAB/ AAS Degree Requirements)	3
		12

<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-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
		15
PROGRAM TOTAL		61

¹ENG-2151 highly recommended.

C = Capstone course.

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Pile Driving. Please see learning outcomes listed under Pile Driving for certificate outcomes.

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>		
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 Session</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. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma/GED

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Pipefitting) (Continued)

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>
ATPF-1210	Rigging	2
ATPL-1000	Care and Use of Tools	2
ATCM-1340	OSHA Standards for the Construction Industry	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
MATH-1xxx	1000-level MATH course or higher	3
		16

<u>Second Semester</u>		<u>Credits</u>
ATPF-1220	Basic Pipefitting Layout	1
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective ... OR	3
FIN-1061	Personal Finance	3
ATPF-xxxx	Pipefitter Elective	2
ATPF-xxxx	Pipefitter Elective	2
Communication...	(Select from American Sign Language, English, Foreign Language, or Speech Communication)	3
		14

<u>Third Semester</u>		<u>Credits</u>
ATPF-1360	Hydronic Heating and Cooling	2
ATPF-xxxx	Elective	1
ATPL-2510	Pumps	2
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	3
		8

<u>Summer Session</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World	3
ATPF-xxxx	Pipefitter Elective	2
ATPF-xxxx	Pipefitter Elective	2
ATPL-2560	Foreman Certification	2
		9

PROGRAM TOTAL 60 - 61

 = Capstone course.

ELECTIVES

<u>Electives</u>		<u>Credits</u>
Recommended courses to select from to fulfill elective requirements.		
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
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. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma/GED

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PIPEFITTING (Continued)

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Pipefitting. Please see learning outcomes listed under Pipefitting for certificate outcomes.

Suggested Semester Sequence		<u>Credits</u>
First Semester		
ATCM-1340	OSHA Standards for the Construction Industry	3
ATPF-1070	Soldering Brazing and Pipefitting Tools	2
ATPF-1210	Rigging	2
ATPF-1220	Basic Pipefitting Layout	1
ATPL-1000	Care and Use of Tools	2
ATPF-xxxx	Pipefitter Elective	<u>2</u>
		12
Second Semester		
		<u>Credits</u>
ATPF-1360	Hydronic Heating and Cooling	2
ATPF-2340	Steam Systems	2
ATPF-xxxx	Pipefitter Elective	2
ATPF-xxxx	Pipefitter Elective	2
ATPF-xxxx	Pipefitter Elective	2
ATPF-xxxx	Pipefitter Elective	<u>2</u>
		12
Summer Session		
		<u>Credits</u>
ATPL-xxxx	Plumbing elective	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. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma/GED

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>
First Semester		
ATPL-1000	Care and Use of Tools	2
ATPL-1010	Soldering and Brazing	2
ATPL-xxxx	Plumbing elective	2
ATPL-1070	Pipe Fittings, Valves, and Supports	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective	3
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		14

(continued on next page)

Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Plumbing) (Continued)

<u>Second Semester</u>		<u>Credits</u>
ATPL-xxxx	Plumbing Elective	2
ATPL-1030	State of Ohio Plumbing Code I	2
BADM-xxxx	Business Elective ... OR	3
CNST-1730	Construction Print Reading	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	3
		12 - 13

<u>Third Semester</u>		<u>Credits</u>
ATPL-xxxx	Plumbing Elective	2
ATPL-1220	Gas Systems	2
ATPL-1230	Water supply	2
BADM-xxxx	Business Elective ... OR	3
CNST-xxxx	CNST Elective ... OR	3
FIN-1061	Personal Finance	3
ENG-2151	Technical Writing	3
Natural Sciences Requirement (see AAB/AAS requirements)		3
		15

<u>Fourth Semester</u>		<u>Credits</u>
AIT-2990	Contracting In A Diverse World C	3
ATPL-2320	State of Ohio Plumbing Code III	2
ATPL-2350	Electricity for Plumbers	2
ATPL-xxxx	Plumbing Elective	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 Session</u>		<u>Credits</u>
ATPL-xxxx	Plumbing Elective	2
ATPL-2410	City and State Backflow Certification	2
ATPL-xxxx	Plumbing elective	2
		6

PROGRAM TOTAL 62 - 63

C = Capstone course.

ELECTIVES

Business Electives Credits
Select from the following courses to meet 12 credit elective requirements.

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

<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 & Equipment	3

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. Department 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Plumbing. Please see learning outcomes listed under Plumbing for certificate outcomes.

<u>First Semester</u>		<u>Credits</u>
ATPL-1000	Care and Use of Tools ¹	2
ATPL-1010	Soldering and Brazing ¹	2
ATPL-1030	State of Ohio Plumbing Code I	2
ATPL-xxxx	Plumbing elective	2
ATPL-1070	Pipe Fittings, Valves, and Supports	2
		10

<u>Second Semester</u>		<u>Credits</u>
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
ATPL-xxxx	Plumbing elective	2
ATPT-xxxx	ATPT elective course	2
ATPL-xxxx	Plumbing elective	2
		14

(continued on next page)

PLUMBING (Continued)

<u>Summer Session</u>		<u>Credits</u>
ATPL-2410	City and State Backflow Certification	2
ATPL-xxxx	Plumbing elective	2
ATPL-xxxx	Plumbing elective	<u>2</u>
		6
PROGRAM TOTAL		30

¹Apprentice may be awarded credit from JATC for life experience.

Student must complete apprenticeship and be eligible for journey certification to receive Certificate of Proficiency.

**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. 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. 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 Sheet Metal Working.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:

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

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

<u>Suggested Semester Sequence</u>		<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	Intro to Microcomputer Applications...OR	3
IT-101H	Honors Intro 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	<u>3</u>
		16

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Program Sequences

APPLIED INDUSTRIAL TECHNOLOGY (Sheet Metal Working) (Continued)

<u>Third Semester</u>		<u>Credits</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>		<u>Credits</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>Construction Management Electives</u>		<u>Credits</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

<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. 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. 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 Sheet Metal Working.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

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

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: Both degree program and certificate outcomes are based on attainment of journey level status in Sheet Metal Working. Please see learning outcomes listed under Sheet Metal Working for certificate outcomes.

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	2
		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	2
		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 - 216-987-5224

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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.
2. Work independently, 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-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	3
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	_
		15
<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-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>		
		<u>Credits</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>		
		<u>Credits</u>
AUTO-2300	Automatic Transmissions ...OR	3
AUTO-2650	Hybrid Vehicle Safety and Service	3
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		63

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 Associate of Applied Science degree in Automotive Technology.

Program Admission Requirements:

- High School Diploma/GED highly recommended, but not required.
- Contact the Automotive Technology department at 216-987-5330.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
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	
IT-1010	Intro to Microcomputer Applications ... OR	3
IT-101H	Honors Intro to Microcomputer Applications	
		13

<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	30

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence

<u>First Semester</u>		<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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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-1240	Contemporary Mathematics or higher ¹	3
DEGR-xxxx	General Elective	<u>1 - 3</u> 13 - 15
<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	3
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 - 62

¹MATH-1800-1820 may not be used to meet this requirement. MATH-1410 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 Management

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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 competency 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>First Semester</u>		<u>Credits</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-1240	Contemporary Mathematics or higher ¹	3
SPCH-1010	Fundamentals of Speech Communication	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</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>		<u>Credits</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>		<u>Credits</u>
BADM-1460	Workers' Compensation Law ¹	3
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	<u>3</u>
		16
PROGRAM TOTAL		62

¹MATH-1800-1820 may not be used to meet this requirement. MATH-1410 or higher recommended for students planning to transfer.

¹BADM-1460 is cross-listed with PL-1460. Either course will meet this program requirement.

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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>First Semester</u>		<u>Credits</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>		<u>Credits</u>
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior ... OR	4
BADM-2110	Production/Operations Management	3
MARK-2010	Principles of Marketing	3
MATH-1240	Contemporary Mathematics or higher	3
		13 - 14
<u>Third Semester</u>		<u>Credits</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 ¹	3 - 4
		14 - 15
<u>Fourth Semester</u>		<u>Credits</u>
BADM-2150	Business Law	4
BADM-2790	International Business Strategy and Application C	4
BADM- xxxx	Business Elective	3
BADM- xxxx	Business Elective	3
DEGR-xxxx	Select Foreign Language elective	3 - 4
		17 - 18
PROGRAM TOTAL		60 - 63

¹Foreign 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.

C = Capstone course.

ELECTIVES

<u>BADM electives</u> (select a minimum of 6 credits)		<u>Credits</u>
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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 (NMBITE).

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

This program has been deleted effective Fall 2015. Students currently in the program have two years to complete this program until Summer 2017. After Summer 2017, certificates will no longer be granted for this program.

BUSINESS MANAGEMENT (Strategic Leadership)

Short-Term Certificate

This program has been deleted effective Fall 2015. Students currently in the program have two years to complete this program until Summer 2017. After Summer 2017, certificates will no longer be granted for this program.

**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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>First Semester</u>		<u>Credits</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-1240	Contemporary Mathematics or higher ¹	3
SPCH-1010	Fundamentals of Speech Communication	3
DEGR-xxxx	General Elective	1 - 3
		16 - 18
<u>Second Semester</u>		<u>Credits</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>		<u>Credits</u>
BADM-1300	Small Business Management	4
BADM-2010	Business Communications	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
		14
<u>Fourth Semester</u>		<u>Credits</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	3
		15
PROGRAM TOTAL		60 - 62

¹MATH-1800-1819/2800-2819 & 1820/2820 may not be used to meet this requirement. MATH-1410 or higher recommended for students planning to transfer.

C = Capstone course.

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 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 or C&CR-1100 in the spring or summer prior to entering the program.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>Credits</u>
<u>First Semester</u>		
C&CR-1000	Introduction to Court Reporting (a)	
C&CR-1100	Introduction to Voice Captioning (b)	
C&CR-1200	Voicewriting I (b) ¹	
C&CR-1210	Voicewriting II (b) ¹	
C&CR-1300	Realtime Theory I (a)	
C&CR-1350	Legal Terminology	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		6

<u>Second Semester</u>		<u>Credits</u>
C&CR-1220	Voicewriting III (b)	
C&CR-1330	Realtime Theory II (a)	
C&CR-1340	Realtime Theory III (a)	
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
		10

<u>Summer Session</u>		<u>Credits</u>
C&CR-1451	Speedbuilding and Transcription at 140 WPM	3
C&CR-1601	Court Reporting Technology	4
CJ-1120	Criminal Court Procedure	2
		9

<u>Third Semester</u>		<u>Credits</u>
C&CR-2300	Court Procedures	3
C&CR-2401	Speedbuilding and Transcription at 180 WPM	3
C&CR-2602	Technical Terminology	3
Arts & Hum	(see AAB/AAS degree requirements)	3
Soc and Beh Sci	(See AAB/AAS degree requirements)	3
		15

<u>Fourth Semester</u>		<u>Credits</u>
C&CR-2451	Speedbuilding and Transcription at 225 WPM	3
C&CR-2470	Advanced Technology C	3
C&CR-2840	Internship	1
C&CR-xxxx	Any C&CR elective course	1
Communication...	(See AAB Degree requirements)	3
		11
	Program Subtotal	51

¹Consecutive eight week course.

C = Capstone course.

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
	PROGRAM TOTAL - OPTION A	60

<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
	PROGRAM TOTAL - OPTION B	60

CAPTIONING AND COURT REPORTING CERTIFIED STENOWRITING

Certificate of Proficiency

The Certificate of Proficiency in Court Reporting NCRA Certified Steno Writing Curriculum will prepare students to be an entry-level court reporter in the judicial/official, freelance, captioning and/or CART avenues of the profession, or employment as a transcriptionist using steno writing technology. Upon completion of this certificate, students can sit for the NCRA Written Knowledge Test. This is a 100-question testing knowledge on procedural, and more academic-type materials including vocabulary, punctuation, transcript distribution, professional responsibilities, and ethics. Students can sit for the NCRA Skills Test, Registered Professional Reporter (RPR) using steno writing technology consisting of the dictation and transcription of three five-minute segments with accuracy of 95 percent - 180 word-per-minute literary, a 200 word-per-minute jury charge, and a 225 word-per-minute question and answer.

Program Admissions Requirements:

- Eligibility for ENG-1010

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	1
C&CR-1300	Realtime Theory I	4
C&CR-1350	Legal Terminology	3
		8

<u>Second Semester</u>		<u>Credits</u>
C&CR-1330	Realtime Theory II	2
C&CR-1340	Realtime Theory III	2
C&CR-1521	Realtime Theory Reinforcement	2
C&CR-2350	Editing Legal Documents	2
		8

<u>Summer Session</u>		<u>Credits</u>
C&CR-1451	Speedbuilding and Transcription at 140 WPM	3
C&CR-1601	Court Reporting Technology	4
C&CR-xxxx	Any C&CR elective course 1-3 cr	1 - 3
CJ-1120	Criminal Court Procedure ⁴	2
		10 - 12

<u>Third Semester</u>		<u>Credits</u>
C&CR-2200	Medical Terminology for Captioning and Court Reporting	3
C&CR-2300	Court Procedures	3
C&CR-2401	Speedbuilding and Transcription at 180 WPM	3
C&CR-2602	Technical Terminology	3
		12

<u>Fourth Semester</u>		<u>Credits</u>
C&CR-2451	Speedbuilding and Transcription at 225 WPM	3
C&CR-2470	Advanced Technology	3
C&CR-2840	Internship	1
C&CR-xxxx	Any C&CR elective course 1-3 cr	1 - 3
		8 - 10

PROGRAM TOTAL 46 - 50

⁴This class is only offered in the summer specific to C&CR students.

CAPTIONING AND COURT REPORTING CERTIFIED VOICEWITING

Certificate of Proficiency

The Certificate of Proficiency in Captioning and Court Reporting Certified Voice Writing Curriculum will prepare students to be an entry-level court reporter in the judicial/official, freelance, captioning and/or CART avenues of the profession, or employment as a transcriptionist using voice writing technology. Upon completion of this certificate, students can sit for the NVRA Written Knowledge Test. This is a 100-question testing knowledge on procedural, and more academic-type materials including vocabulary, punctuation, transcript distribution, professional responsibilities, and ethics. Students can sit for the NVRA Skills Test, Certified Verbatim Reporter (CVA) using voice technology consisting of the dictation and transcription of three five-minute segments with accuracy of 95 percent - 180 word-per-minute literary, a 200 word-per-minute jury charge, and a 225 word-per-minute question and answer.

Program Admissions Requirements:

- Eligibility for ENG-1010

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

(continued on next page)

**CAPTIONING AND COURT REPORTING
CERTIFIED VOICEWRITING (Continued)**

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 realtime 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 NCRA Registered Professional Reporter (RPR) or NVRA Certified Verbatim Reporter (CVR) Exam.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
C&CR-1100	Introduction to Voice Captioning	1
C&CR-1200	Voicewriting I	2
C&CR-1210	Voicewriting II	2
C&CR-1350	Legal Terminology	3
		8
<u>Second Semester</u>		<u>Credits</u>
C&CR-1220	Voicewriting III	4
C&CR-1451	Speedbuilding and Transcription at 140 WPM	3
C&CR-2350	Editing Legal Documents	2
		9
<u>Summer Session</u>		<u>Credits</u>
C&CR-2401	Speedbuilding and Transcription at 180 WPM	3
C&CR-1601	Court Reporting Technology	4
C&CR-xxxx	Any C&CR elective course 1-3 cr	1 - 3
CJ-1120	Criminal Court Procedure ¹	2
		10 - 12
<u>Third Semester</u>		<u>Credits</u>
C&CR-2200	Medical Terminology for Captioning and Court Reporting	3
C&CR-2300	Court Procedures	3
C&CR-2451	Speedbuilding and Transcription at 225 WPM	3
C&CR-2602	Technical Terminology	3
		12
<u>Fourth Semester</u>		<u>Credits</u>
C&CR-2470	Advanced Technology	3
C&CR-2840	Internship	1
C&CR-xxxx	Any C&CR elective course 1-3 cr	1 - 3
		5 - 7
	PROGRAM TOTAL	44 - 48

¹This class is only offered in the summer specific to C&CR students.

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 Admissions Requirements:

- Completion of the short-term certificate in Court Reporting Technologies or RPR Certification or completion of an entrance examination.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
C&CR-2401	Speedbuilding and Transcription at 180 WPM	3
C&CR-2480	Using Captioning Technology	3
C&CR-2510	CART Production	3
		9
<u>Second Semester</u>		<u>Credits</u>
C&CR-2451	Speedbuilding and Transcription at 225 WPM	3
C&CR-2520	Captioning Production	3
C&CR-2602	Technical Terminology	3
		9
<u>Summer Session</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 **21**

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 Admissions Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010 College Composition I.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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		Credits
<u>First Semester</u>		
C&CR-1000	Introduction to Court Reporting ...OR	1
C&CR-1100	Introduction to Voice Captioning ²	
C&CR-1300	Realtime Theory I ...OR	4
C&CR-1200	Voicewriting I ¹ ...AND	2
C&CR-1210	Voicewriting II ¹	2
C&CR-1350	Legal Terminology	<u>3</u>
		8
<u>Second Semester</u>		<u>Credits</u>
C&CR-1330	Realtime Theory II ...AND	2
C&CR-1340	Realtime Theory III ...OR	2
C&CR-1220	Voicewriting III	4
C&CR-2350	Editing Legal Documents	<u>2</u>
		6
<u>Summer Session</u>		<u>Credits</u>
C&CR-1451	Speedbuilding and Transcription at 140 WPM	3
C&CR-1601	Court Reporting Technology	4
C&CR-2200	Medical Terminology for Captioning and Court Reporting	3
		<u>10</u>
	PROGRAM TOTAL	24

¹Consecutive eight week course.

VOICEWRITING

Short-Term Certificate

Entry-level court reporter in the judicial/official, freelance, captioning and/or CART avenues of the profession. Entry-level employment as a transcriptionist using voice recognition technology. Upon completion of this certificate, students can sit for the NVRA and/or NCRA Written Knowledge Test. This is a 100-question testing knowledge on procedural, and more academic-type materials including vocabulary, punctuation, transcript distribution, professional responsibilities, and ethics. Students can sit for the NVRA Skills Test using voice writing technology consisting of the dictation and transcription of three five-minute segments with accuracy of 95 percent - 180 word-per-minute literary, a 200 word-per-minute jury charge, and a 225 word-per-minute question and answer. In the following states this certificate prepares you for entry-level CART and captioning work whereas voice writers are currently not allowed to practice in their judicial systems: California, Hawaii, Idaho, Illinois, Iowa, Montana, Nebraska, New Jersey, New York, Ohio, Oklahoma, Rhode Island, Vermont.

Program Admissions Requirements:

- Eligibility for ENG-1010 College Composition I.

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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. Maintain a professional appearance and demeanor in a legal setting while adhering to ethical standards and requirements and completing work in a timely manner.
7. Prepared to sit for the Certified Verbatim Reporter (CVR) Exam.

(continued on next page)

Program Sequences

VOICEWRITING (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
C&CR-1100	Introduction to Voice Captioning	1
C&CR-1200	Voicewriting I	2
C&CR-1210	Voicewriting II	2
C&CR-1350	Legal Terminology	3
C&CR-2350	Editing Legal Documents	2
		10
<u>Second Semester</u>		
C&CR-1220	Voicewriting III	4
C&CR-2200	Medical Terminology for Captioning and Court Reporting	3
C&CR-2401	Speedbuilding and Transcription at 180 WPM	3
		10
<u>Third Semester</u>		
C&CR-2451	Speedbuilding and Transcription at 225 WPM	3
C&CR-2840	Internship	1
		4
PROGRAM TOTAL		24

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 Admissions Requirements:

- Eligibility for ENG-1010 College Composition I.
- The capstone course, POL-2140, has service learning as a requirement.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>Credits</u>
<u>First Semester</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	3 - 6
		9 - 12
<u>Second Semester</u>		
POL-2040	Conflict Resolution Skills	3
DEGR-xxxx	Select 1 or 2 Electives from below list	3 - 6
		6 - 9
<u>Summer Session</u>		
POL-2140	Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning	3
DEGR-xxxx	Select 1 Elective from below list	3
		6
PROGRAM TOTAL		21 - 27
<u>Electives</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
HIST 1020	History of Civilization II	3
HIST 102H	Honors History of Civilization II	3
HIST 2520	Hitler and the Holocaust	3
HUM 1020	The Individual in Society	3
PHIL 101H	Honors Introduction to Philosophy	3
PHIL 2020	Ethics	3
PHIL 202H	Honors Ethics	3
PHIL 208H	Honors Social Justice	3
POL 2050	Study Abroad in Peace and Conflict Resolution	3
POL 2110	Terrorism and Counterterrorism	3
PSY 1060	Cross-Cultural Competency for Health Care Providers	1
PSY 2020	Life Span Development	4
PSY 202H	Honors Life Span Development	4
PSY 2040	Social Psychology	3
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
SPCH 2160	Intercultural Communication	3
WST 1510	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, assistant field superintendents, and project engineers. 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 management.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Completion of MATH-0965, with "C" or higher, or appropriate score on MATH placement test
- Complete the following: CNST-1281 Construction Engineering Orientation, CNST-1731 Construction Print Reading, and IT-1010 Introduction to Microcomputer Applications

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Recognize purpose for building information modeling within building design.
2. Monitoring 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. Using 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 principals, using industry standard computer technology to develop and maintain an organized management tool that effectively projects and communicates the projects 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>Credits</u>
<u>First Semester</u>		
CNST-1281	Construction Engineering Orientation	3
CNST-1731	Construction Print Reading	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-1530	College Algebra	<u>4</u> 16
<u>Second Semester</u>		
CNST-1410	Architectural CAD I	3
CNST-1750	Construction Safety	3
CNST-2130	Construction Methods, Materials and Equipment	3
MATH-1540	Trigonometry or higher	3
PHYS-1210	College Physics I	<u>4</u> 16
<u>Third Semester</u>		
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> 15
<u>Fourth Semester</u>		
ACCT-1020	Applied Accounting ... OR	3
ACCT-1310	Financial Accounting ¹	4
CNST-2330	Construction Scheduling C	3
CNST-xxxx	CNST Elective ²	3
MET-2200	Strength of Materials	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		<u>3</u> 15 - 16
PROGRAM TOTAL		62 - 63

¹ACCT 1310 recommended for university transfer

²CNST 1510 recommended for university transfer

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.
- Completion of MATH-0965 with grade of "C" or higher.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
CNST-1281	Construction Engineering Orientation	3
CNST-1731	Construction Print Reading	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications	3
MATH-1530	College Algebra	4
		16

<u>Second Semester</u>		<u>Credits</u>
CNST-1410	Architectural CAD I	3
CNST-1750	Construction Safety	3
CNST-2130	Construction Methods, Materials and Equipment	3
MATH-1540	Trigonometry	3
PHYS-1210	College Physics I	4
		16
	PROGRAM TOTAL	32

CRIMINAL JUSTICE

Associate of Applied Science degree in Criminal Justice

Various aspects of law enforcement and criminal justice are covered, including policing, the judicial system, criminal investigations, industrial/corporate security and juvenile delinquency. The course 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 Admissions Requirements:

- Most civil service exams require a high school diploma or GED.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<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	
		15

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CRIMINAL JUSTICE (Continued)

<u>Second Semester</u>		<u>Credits</u>
CJ-1111	Constitutional Law for Police	3
CJ-1330	Criminal Law	3
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
		15

<u>Third Semester</u>		<u>Credits</u>
CJ-2300	Juvenile Delinquency	2
CJ-2390	The Investigative Process	4
CJ-xxxx	Criminal Justice Elective	3
SPCH-1xxx	Any 1000 level SPCH elective course or higher ¹	3
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government ... OR	
PSY-1010	General Psychology ... OR	
PSY-101H	Honors General Psychology ... OR	
SOC-1010	Introductory Sociology ... OR	
SOC-101H	Honors Introductory Sociology ... OR	
SOC-2160	Introduction to Criminology ... OR	
UST-1010	Introduction to Urban Studies	
		15

<u>Fourth Semester</u>		<u>Credits</u>
CJ-1010	Computers in Criminal Justice	2
CJ-2360	Community Oriented Policing	3
CJ-2990	Issues in Supervision C	4
CJ-xxxx	Criminal Justice Elective	3
CJ-xxxx	Criminal Justice Elective	3
		15

PROGRAM TOTAL 60

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

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 at 216-987-3076.
- High School Diploma/GED
- Current valid driver's license
- Must be at least 21 years of age a completion of academy
- No felony convictions (misdemeanor convictions will be reviewed by Academy commander)

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</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	
MATH-1xxx	1000-level MATH course or higher	3
		16
<u>Second Semester</u>		
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	2
		16

<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
SPCH-1xxx	Any 1000 level SPCH elective course or higher ²	3
		16

(continued on next page)

Program Sequences

CRIMINAL JUSTICE (Basic Police Academy) (Continued)

<u>Fourth Semester</u>		<u>Credits</u>
CJ-1020	Introduction to Homeland Security ¹	2
CJ-1111	Constitutional Law for Police	3
CJ-2360	Community Oriented Policing	3
CJ-2990	Issues in Supervision C	4
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government ... OR	
PSY-1010	General Psychology ... OR	
PSY-101H	Honors General Psychology ... OR	
SOC-1010	Introductory Sociology ... OR	
SOC-101H	Honors Introductory Sociology ... OR	
SOC-2160	Introduction to Criminology ... OR	
UST-1010	Introduction to Urban Studies	
		15
PROGRAM TOTAL		63

¹Students will receive credit for these courses upon successful completion of the Police Academy Program.

²SPCH-1010 highly recommended.

C = Capstone course.

CRIMINAL JUSTICE (Corrections)

Associate of Applied Science degree in Criminal Justice with a concentration in 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 Admissions Requirements:

- Most civil service exams require a high school diploma or GED.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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-1070	Intro to Corrections	3
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	
		15

<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
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government ... OR	
PSY-1010	General Psychology ... OR	
PSY-101H	Honors General Psychology ... OR	
SOC-1010	Introductory Sociology ... OR	
SOC-101H	Honors Introductory Sociology ... OR	
SOC-2160	Introduction to Criminology ... OR	
UST-1010	Introduction to Urban Studies	
		15

<u>Third Semester</u>		<u>Credits</u>
CJ-2300	Juvenile Delinquency	2
CJ-2510	Community Supervision and Aftercare	4
IT-1010	Introduction to Microcomputer Applications	3
IT-101H	Honors Introduction to Microcomputer Applications	3
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
CJ-xxxx	Criminal Justice Elective	3
CJ-xxxx	Criminal Justice Elective	3
		16
PROGRAM TOTAL		61

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

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:

- High School Diploma/GED.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>First Semester</u>		<u>Credits</u>
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	
		15

<u>Second Semester</u>		<u>Credits</u>
CJ-1010	Computers in Criminal Justice	2
CJ-1400	Assets Protection	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government ... OR	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology ... OR	3
SOC-1010	Introductory Sociology ... OR	3
SOC-101H	Honors Introductory Sociology ... OR	3

SOC-2160	Introduction to Criminology ... OR	3
UST-1010	Introduction to Urban Studies	3
		15

<u>Third Semester</u>		<u>Credits</u>
CJ-2400	Security Management	4
CJ-2410	Security Investigation	3
CJ-2420	Legal Aspects of Private Security	3
CJ-xxxx	Criminal Justice Elective	3
SPCH-1xxx	Any 1000 level SPCH elective course or higher ¹	3
		16

<u>Fourth Semester</u>		<u>Credits</u>
CJ-2440	Protection Services	2
CJ-2990	Issues in Supervision C	4
CJ-xxxx	Criminal Justice Elective	3
CJ-xxxx	Criminal Justice Elective	3
CJ-xxxx	Criminal Justice Elective	3
		15

PROGRAM TOTAL 61

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, methods of interpreting/transliterating and ethical aspects of the interpreting field. The curriculum is divided into two areas of study - Advanced American 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 as an interpreter in a myriad of community-based settings, specializing in the areas of medicine, business, vocational, educational and/or a variety of other settings. Graduates would be employed either as a freelance provider or an agency employee. Other career opportunities include video relay interpreting (VRS) and K-12 educational interpreting.

Program Manager - 216-987-5219

Program Admission Requirements:

- DIS program application and additional admission details located on the DIS program website <http://www.tri-c.edu/programs/deaf-interpretive-services/index.html>
- High School Diploma/GED
- ENG-1010 College Composition I or ENG-101H ("B" grade or higher)

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DEAF INTERPRETIVE SERVICES (Continued)

- Screenings/consideration for DIS admission are conducted annually in late fall, after mid-term progress reporting. **Applications will be considered once students have completed the DIS application packet, to include the following:**
- Complete My Plan.com Career Assessment <http://www.tri-c.edu/career-services/student-career-services/career-exploration.html> and meet with a counselor to review Assessment results. Include MyPlan Career Match results in DIS application packet.
- Complete a DIS Academic Plan with a counselor and submit to DIS.
- Previously completed and/or be currently enrolled in program pre-requisite courses. ASL 1001 Fingerspelling, ASL 1100 Deaf Culture, DIS 1300 Interpreting Fundamentals ("B" grade or higher in each)
- Eligibility for ASL 2412 via completion of ASL 1010, 1020, 2010 and 2020 (comprehensive GPA of 3.0 or higher), **or** appropriate assessment exam scoring of either ASLPI level 3 or SLPI Intermediate level. Check program website for further details, including criteria for the DIS ASL Placement/Skill Assessment option <http://www.tri-c.edu/programs/deaf-interpretive-services/index.html>.
Note: The ASLPI and SLPI are external assessment exams taken outside of the DIS program/college. Check DIS program website for details.

Other Information:

- DIS is a limited admission program. Admission numbers may vary each year, based on anticipated practicum site availability and annual budget considerations. **Admission is on a first come, first served basis, providing students have met the admission criteria and followed proper admission protocol.**
- To satisfy the program requirements and earn the Associate of Applied Science degree, all students pursuing an AAS degree for Deaf Interpretive Services, are required to have earned a grade of a "C" or higher in DIS 2940 Field Experience II and its companion lab course, DIS 2740.
- Non-DIS degree students may enroll for individual DIS courses, providing they meet the course specific prerequisites and/or have received permission from the DIS Program Manager.
- Placement Evaluations may be required of certain students to determine both receptive and expressive ASL skills. Evaluations assess knowledge of proper ASL vocabulary, proper parameters and ASL grammar and structures. DIS degree seeking students requiring Placement Evaluations includes, but is not limited to, the following:
 - o Any student who has not taken ASL classes for one academic year or more
 - o All transfer students with previous ASL college credit
- Grade repeat may occur only once for any course that is required for the DIS degree. "W" grades are counted as an attempt. It is recommended that students contact the DIS Program Manager before repeating a course.
- All DIS students entering into Field Experiences should expect that sites may not be immediately local or convenient. Traveling is a necessary part of Field Experiences and students must begin preparing for reliable transportation to sites and substantial time commitments to complete Field Experiences.

- Field Experience placements and their availability occur at varying times throughout the semesters. Delays and changes are expected. Student placements may be changed at the discretion of DIS at any time. Students may need to continue garnering Field Experience hours prior to and/or past semester terms and during holiday breaks to satisfy required hours.
- All DIS students entering Field Experience courses must undergo fingerprinting and background check to satisfy the K-12 practicum requirement. There is a fee for this screening. Once admitted to the program, students will be provided further instruction for when this screening will occur. Details also available on the DIS program website.
- For additional information regarding DIS admission, please check the DIS program website. For specific questions you may contact the DIS Program Manager at donna.liebenauer@tri-c.edu or 216-987-5219.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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) Code of Professional Conduct.
5. Be eligible for K-12 state licensure from the Ohio Department of Education (ODE).
6. Possess the foundational knowledge and skill-based tools for the NAD-RID National Interpreting Certification (NIC) and understand the process for taking the exam.

		Suggested Semester Sequence	<u>Credits</u>
<u>First Semester</u>			
ASL-1001	Fingerspelling		2
ASL-1100	Deaf Culture		3
DIS-1300	Interpreting Fundamentals		3
ENG-1010	College Composition I ...OR		3
ENG-101H	Honors College Composition I		3
PHIL-1000	Critical Thinking		14
		<u>Second Semester</u>	<u>Credits</u>
ASL-2412	Advanced American Sign Language I		4
ASL-xxxx	ASL Elective		2
DIS-1310	Interpreting I		2
SPCH-1010	Fundamentals of Speech Communication		3
THEA-1500	Acting I		3
			14
		<u>Summer Session</u>	<u>Credits</u>
ASL-2420	Advanced American Sign Language II		4
DIS-2300	Transliterating		2
DIS-2310	Interpreting II		2
DIS-2320	Educational Interpreting		3
			11

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DEAF INTERPRETIVE SERVICES (Continued)

<u>Third Semester</u>		<u>Credits</u>
DIS-1402	American Sign Language Linguistics	3
DIS-1740	Field Experience Lab I	1
DIS-1940	Field Experience I	1
DIS-1971	Field Experience Seminar I	1
DIS-2410	Voicing	2
EDUC-1011	Introduction to Education	3
MA-1020	Medical Terminology I...OR	3
C&CR-1350	Legal Terminology	$\frac{3}{2}$
		14
<u>Fourth Semester</u>		<u>Credits</u>
DIS-2420	Advanced Voicing	2
DIS-2740	Field Experience Lab II ¹	1
DIS-2940	Field Experience II ¹ C	1
DIS-2971	Field Experience Seminar II	1
EDUC-1411	Individuals with Exceptionalities	3
MATH-1xxx	1000-level MATH course or higher	3
PE-1430	Physical Relaxation Techniques	$\frac{1}{2}$
		12
	PROGRAM TOTAL	65

C = Capstone course.

¹To satisfy the program requirements and earn the Associate of Applied Science degree, all students pursuing an AAS degree for Deaf Interpretive Services, are required to have earned a grade of "C" or higher in DIS-2940 Field Experience II and its companion lab course, DIS 2740.

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 after meeting requirements listed below. Health Careers Enrollment Center 216 987-4247 for comprehensive admissions information and application packet.

- High School Diploma/GED
- Complete ENG-1010 College Composition I with "C" or higher.
- Complete the program admission requirements below 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 Metropolitan

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.
- All science courses must have been completed within five (5) years of admission to the program.
- ENG-1010, ENG-101H, PSY-1010, PSY-101H and one (1) science course may each be repeated **once** to improve a grade. A "W" grade counts as an attempt.
- Successful completion of Tri-C authorized background check, fingerprinting and BCI records search required <http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html> (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 Manager, Mary Lou Gerosky, 216-987-4494.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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Program Sequences

DENTAL HYGIENE (Continued)

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.
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 ¹	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-1341	Foundational Principles of Dental Hygiene Practice	1
MATH-1240	Contemporary Mathematics 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 ²	2
SPCH-1000	Fundamentals of Interpersonal Communication ... OR	3
SPCH-1010	Fundamentals of Speech Communication... OR	
SPCH-101H	Honors Fundamentals of Speech Communication	-
		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 CHEM-1020 may be taken in place of BIO-1100.

²MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College's math requirement for graduation through Summer 2021.

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>.

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**DIAGNOSTIC MEDICAL SONOGRAPHY
(Continued)**

- High School Diploma/GED. Students must be a minimum of 18 years of age to begin the 5 semester program sequence.
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete MATH-1410 with "C" or higher. MATH-1530 or higher will also be accepted with a "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 GPA 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 an 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.
- Criminal background check required (see page 73). Also see General Application Procedures for Health Careers.
- To improve from a previous attempt, only two of the admission courses may be repeated once. A "W" is counted as an attempt.
- 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.
- MA-1020 will be accepted in lieu of MA-1010; PHIL-2050 will be accepted in lieu of HTEC-1110.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Note: Letters in parenthesis refer to options (a) or (b).

Suggested Semester Sequence

<u>Program Admissions Requirements</u>	<u>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-1410	Elementary Probability and Statistics I ¹	<u>3</u>
		20

<u>First Semester</u>	<u>Credits</u>	
DMS-1311	Initial Sonographic Scanning	2
DMS-1602	Echocardiography I (a)	
DMS-1701	Vascular Sonography I (b)	
DMS-235B	Doppler Principles and Instrumentation	1
MA-1010	Introduction to Medical Terminology	2
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
		8

<u>Second Semester</u>	<u>Credits</u>	
DMS-1940	Field Experience I	1
DMS-2301	Intermediate Sonographic Scanning	2
DMS-2602	Echocardiography II (a)	
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	<u>1</u>
		7

<u>Summer Session</u>	<u>Credits</u>	
DMS-1950	Field Experience II	<u>2</u>
		2

<u>Third Semester</u>	<u>Credits</u>	
DMS-1381	Cardiac Diagnostic Procedures	3
DMS-235A	Sonographic Principles, Performance, & Safety	2
DMS-2940	Field Experience III	3
DMS-2985	Physics Review	1
DMS-2991	Sonography Capstone	<u>1</u>
		10

<u>Fourth Semester</u>	<u>Credits</u>	
DMS-2650	Pediatric Cardiac Sonography (a) ²	
DMS-2760	Transcranial Doppler Sonography (b) ²	
DMS-2950	Field Experience IV	1
DMS-2981	Specialty Registry Review	1
DMS-xxxx	DMS Elective ²	1 - 2
HTEC-1110	Ethics for Health Care Professionals	<u>1</u>
		4 - 5

Program Subtotal 51 - 52

¹MATH-1530 College Algebra or higher will be accepted in place of MATH-1410.

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Program Sequences

DIAGNOSTIC MEDICAL SONOGRAPHY (Continued)

²Course selection can only be used once toward a graduation requirement.

C = Capstone course.

OPTIONS

(A) Echocardiography Option

Take the following courses to complete Option A:		<u>Credits</u>
DMS-1602	Echocardiography I	4
DMS-2602	Echocardiography II	4
DMS-2650	Pediatric Cardiac Sonography	3
PROGRAM TOTAL - OPTION A		62 - 63

(B) Vascular Option

Take the following courses to complete Option B:		<u>Credits</u>
DMS-1701	Vascular Sonography I	4
DMS-2702	Vascular Sonography II	4
DMS-2760	Transcranial Doppler Sonography	1
PROGRAM TOTAL - OPTION B		60 - 61

ELECTIVES

<u>Technical Electives</u>		<u>Credits</u>
Select from the following courses to fulfill DMS elective option:		
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-2760	Transcranial Doppler Sonography	1
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. Student must be a minimum of 18 years of age to begin the 5 semester program sequence.
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH-1410 with "C" or higher. MATH-1530 or higher will also be accepted with a "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.
- 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.
- MA-1020 will be accepted in lieu of MA-1010; PHIL-2050 will be accepted in lieu of HTEC-1110.

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DIAGNOSTIC MEDICAL SONOGRAPHY (General Sonography) (Continued)

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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</u>	<u>Admissions Requirements</u>	<u>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-1410	Elementary Probability and Statistics I ¹	3
		20

<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-1010	Introduction to Medical Terminology	2
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		15

<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 Session</u>		<u>Credits</u>
DMS-1950	Field Experience II	2
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	-
		5

<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	DMS Elective	1 - 2
HTEC-1110	Ethics for Health Care Professionals	1
		4 - 5

PROGRAM TOTAL 64 - 65

¹MATH-1530 or higher will be accepted in place of Math-1410

 = Capstone course.

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

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Program Sequences

DIETETIC TECHNOLOGY (Continued)

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
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
- Sufficient score on Biology placement test or grade of "C" or higher in BIO-1100.
- 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 a 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.
- 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/health-careers/dietetic-technology/index.html>
- General Nutrition certificate available.
- Dietary Manager certificate available.
- DTP Goals and graduate outcomes can be found at <http://www.tri-c.edu/programs/health-careers/dietetic-technology/index.html>

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	7

<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
DIET-1200	Basic Nutrition	3
DIET-1310	Introduction to Dietetics	2
DIET-1320	Nutrition Applications	1
HOSP-1020	Sanitation and Safety	2
MATH-1240	Contemporary Mathematics or higher ¹	3
		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	4
		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
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
MA-1020	Medical Terminology I	3
SPCH-1010	Fundamentals of Speech Communication... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
		17

(continued on next page)

DIETETIC TECHNOLOGY (Continued)

<u>Fourth Semester</u>		<u>Credits</u>
DIET-2311	Medical Nutrition Therapy II ³	3
DIET-2320	Medical Nutrition Therapy III ³	2
DIET-2501	Nutrition Applications in Long Term Care ²	2
DIET-2850	Medical Nutrition Care Practicum ²	2
DIET-2862	Geriatric Nutrition Practicum ¹	2
DIET-2990	Dietetic Technology Professional Development Skills C	2
		13
PROGRAM TOTAL		65

¹ MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College's math requirement for graduation through Summer 2021.

²1st eight week course.

³2nd eight week 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 Dietary Manager's Association.

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-1000 level or higher.
- 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.
- Criminal background check required (see page 73).

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>Suggested Semester Sequence</u>		<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-1xxx	1000-level MATH course or higher ¹	<u>3</u>
		15
<u>Second Semester</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-1240 is required for Dietetic Technology Program

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-1000 level 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).

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	Credits
<u>First Semester</u>		
BIO-2331	Anatomy and Physiology I	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-1xxx	1000-level MATH course or higher ¹	<u>3</u>
		17

<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	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	<u>3</u>
		15 - 16
	PROGRAM TOTAL	32 - 33

¹MATH-1240 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, childcare 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. The Early Childhood Education program is accredited by the National Association for the Education of Young Children. 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 (ECED) 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

(continued on next page)

EARLY CHILDHOOD EDUCATION
(Continued)

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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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, 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, use Standard English in writing and speaking.

Suggested Semester Sequence		<u>Credits</u>
<u>First 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	3
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		16
<u>Second Semester</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	3
		16
<u>Summer Session</u>		
ECED-2300	Child Behavior and Guidance	3
EDUC-2050	Human Diversity in Education	3
		6
<u>Third Semester</u>		
ECED-1321	Math and Science Inquiry in an Integrated Curriculum	3
ECED-1331	Music & Movement in an Integrated Curriculum	3
EDUC-1411	Individuals with Exceptionalities	3
ECED-1860	Experience with Young Children in Early Childhood Settings	3
ECED-2500	Infant/Toddler Development, Relationships, and Programs	3
		15
<u>Fourth Semester</u>		
ECED-2401	Families, Communities & Schools	3
ECED-2870	Early Childhood Education Student Teaching Practicum C	2
ECED-2990	Early Childhood Education Student Teaching Seminar C	3
PSY-2110	Educational Psychology	3
		11
	PROGRAM TOTAL	64
C	= 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.

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.

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.
- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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.

		Suggested Semester Sequence	
		<u>Summer Session</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>First Semester</u>	<u>Credits</u>
ECED-1400	Administration and Leadership in Early Childhood		4
ECED-2300	Child Behavior and Guidance		3 7
		<u>Second Semester</u>	<u>Credits</u>
BADM-1300	Small Business Management		4
ECED-2401	Families, Communities & Schools		3 7
		PROGRAM TOTAL	21

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

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Summer Session	Suggested Semester Sequence	Credits
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

First Semester		Credits
ECED-1301	Language and Literacy in an Integrated Curriculum ¹	3
ECED-2300	Child Behavior and Guidance	3
		6
Second Semester		Credits
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

This program has been deleted effective Fall 2015. Students currently in the program have two years to complete this program until Summer 2017. After Summer 2017, certificates will no longer be granted for this program.

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-1530 or higher
- EET-1161 Direct Current Circuits with a "B" grade or higher
- Concentrations available: Electrical/Electronic Engineering Basic, Bio-Medical, Digital Communications, Including RF, Radio Frequency

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

(continued on next page)

Program Sequences

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Continued)

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 professional, ethical, and social responsibilities and the need for lifelong learning in the engineering profession.
5. Conduct, analyze and interpret electronic experiments using electronic instrumentation standard measurements.
6. Apply knowledge of circuit analysis/design and use computer languages and software to solve a stated problem in analog or digital electronics.
7. Apply knowledge of physical sciences and practice of engineering standards to build, test, operate and maintain electrical and electronic systems.
8. Use algebra, trigonometry, or applied calculus to conduct experiments of electrical and electronic systems.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
EET-1161	Direct Current Circuits	3
EET-1180	Surface Mount Soldering	1
EET-1190	Printed Circuit Layout	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1530	College Algebra ¹	4
MET-1100	Technology Orientation	<u>2</u>
		15

<u>Second Semester</u>		<u>Credits</u>
EET-1210	AC Electric Circuits	3
EET-1241	Digital Fundamentals	3
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	
ENG-2151	Technical Writing	
MATH-1540	Trigonometry	3
PHYS-1210	College Physics I	<u>4</u>
		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-2242	C and ASM Programming with Embedded Applications	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 C	2
EET-2500	Instrumentation and Control	3
EET-2520	Programmable Logic Controllers ... OR	3
EET-xxxx	EET Elective Course	2 - 3
PHIL-2020	Ethics ... OR	3
PHIL-202H	Honors Ethics	-
		13 - 14
PROGRAM TOTAL		62 - 63

¹MATH-1580 and MATH-1610 will be accepted in place of MATH-1530 & MATH-1540. MATH-1580 and MATH-1610 are recommended for students planning to transfer.

C = Capstone course.

ELECTIVES

<u>Electives</u>	<u>Credits</u>	
Select from the below courses to fulfill elective requirement.		
EET-1100	Introduction to Robotics	2
EET-1150	Basic Robotics with Math	2
EET-2530	Unmanned Aerial Vehicles	3

ELECTRONIC ENGINEERING TECHNICIAN

Certificate of Proficiency

The Electronic Engineering Technology 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 degree. The certificate program supports an associate degree that will transfer via 2 + 2 to bachelor degree programs at The University of Akron, 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-1010
- Eligibility for MATH-1530 or higher

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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ELECTRONIC ENGINEERING TECHNICIAN (Continued)

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

1. Demonstrate skills supported by knowledge of elementary electronic circuits.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
EET-1161	Direct Current Circuits	3
EET-1180	Surface Mount Soldering	1
EET-1190	Printed Circuit Layout	2
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
MATH-1530	College Algebra ...OR	4
MATH-153H	Honors College Algebra	
MET-1100	Technology Orientation	<u>2</u>
		15

Suggested Semester Sequence		Credits
<u>Second Semester</u>		
EET-1210	AC Electric Circuits	3
EET-1241	Digital Fundamentals	3
ENG-1020	College Composition II ...OR	3
ENG-102H	Honors College Composition II ...OR	
ENG-2151	Technical Writing	
ITNT-2300	Networking Fundamentals	3
MATH-1540	Trigonometry ...OR	3
MATH-154H	Honors Trigonometry	
DEGR-xxxx	Select 1 Elective from below list	<u>3</u>
		18

PROGRAM TOTAL 33

<u>Electives</u>		Credits
A student is required to take one of these electives		
BIO-1050	Human Biology	3
EET-2242	C and ASM Programming with Embedded Applications	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 biomedical program in electrical engineering technology will find jobs in hospitals, 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-1530 or higher

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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. Prepared to sit for the certified Bio Medical Equipment Technician Exam.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
EET-1161	Direct Current Circuits	3
EET-1180	Surface Mount Soldering	1
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1530	College Algebra ... OR	4
MATH-153H	Honors College Algebra	
MET-1100	Technology Orientation	<u>2</u>
		13

Suggested Semester Sequence		Credits
<u>Second Semester</u>		
BIO-1050	Human Biology	3
EET-1210	AC Electric Circuits	3
EET-1241	Digital Fundamentals	3
ENG-2151	Technical Writing	3
MATH-1540	Trigonometry ... OR	3
MATH-154H	Honors Trigonometry	
PHYS-1210	College Physics I	<u>4</u>
		19

Suggested Semester Sequence		Credits
<u>Third Semester</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

(continued on next page)

Program Sequences

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Bio-Medical) (Continued)

<u>Fourth Semester</u>		<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
<u>Summer Session</u>		<u>Credits</u>
EET-2901	Clinical Internship	<u>3</u>
		3
PROGRAM TOTAL		64

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 Mathematics course

Other Information:

- Skills acquired prepare students to take industry certification exams.
- Certificate available in Computer Maintenance Technology (A+ Certification).

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>Summer Session</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>		
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>		
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

(continued on next page)

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Computer Networking Hardware) (Continued)

<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 C	3
Natural Science (lecture)		<u>3</u>
		12

PROGRAM TOTAL 62

¹Consecutive eight week course.

C = Capstone course.

CISCO

Short-Term Certificate

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 Mathematics course

Other Information:

- Skills acquired prepare students to take the Cisco certification exams, specifically the Cisco Network Associates (CCNA) exams.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 networking solutions in the context of business needs.
9. Apply fundamental concepts of Cisco routing and switching hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support Cisco hardware and software to ensure an efficient and effective operation.
10. Apply knowledge of Cisco 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 the CCNA certification exams.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>Summer Session</u>		
IT-1025	Information Technology Concepts for Programmers	3
ITNT-2300	Networking Fundamentals	3
ITNT-2310	TCP/IP	<u>3</u>
		9

<u>First Semester</u>		<u>Credits</u>
EET-1302	Cisco I Basic Networking Technologies	3
EET-1312	Cisco II Basic Routing and Switching ¹	<u>3</u>
		6

<u>Second Semester</u>		<u>Credits</u>
EET-2302	Cisco III Intermediate Routing and Switching ¹	3
EET-2312	Cisco IV Basic WAN Technologies	<u>3</u>
		6

PROGRAM TOTAL 21

¹Consecutive eight week courses

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

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Requirements</u>		<u>Credits</u>
IT-1010	Introduction to Microcomputer Applications ¹ ...OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
<u>Summer Session</u>		<u>Credits</u>
EET-1015	Introduction to Computer Maintenance and Repair	3
IT-1025	Information Technology Concepts for Programmers	3
<u>First Semester</u>		<u>Credits</u>
EET-1035	Operating Systems and Software for PC Technicians	4
EET-1055	Computer Hardware Support	4
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	3
ITNT-2300	Networking Fundamentals	3
		14
<u>Second Semester</u>		<u>Credits</u>
BADM-1050	Professional Success Strategy	3
ITNT-2310	TCP/IP	3
ITNT-2320	Network Administration I	3
MATH-1xxx	1000-level MATH course or higher	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).

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ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Digital Communications, Including RF, Radio Frequency) (Continued)

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010 College Composition I
- Eligibility for MATH-1530 College Algebra, or appropriate placement test score.
- Receive a "B" grade or higher in EET-1161 Direct Current Credits.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

<u>First Semester</u>		<u>Credits</u>
EET-1161	Direct Current Circuits	3
EET-1180	Surface Mount Soldering	1
EET-1190	Printed Circuit Layout	2
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MET-1100	Technology Orientation	2
MATH-1530	College Algebra ... OR	4
MATH-153H	Honors College Algebra	
		15

<u>Second Semester</u>		<u>Credits</u>
EET-1210	AC Electric Circuits	3
EET-1241	Digital Fundamentals	3
ITNT-2300	Networking Fundamentals	3
MATH-1540	Trigonometry ... OR	3
MATH-154H	Honors Trigonometry	
PHYS-1210	College Physics I	4
		16

<u>Third Semester</u>		<u>Credits</u>
EET-2120	Electronics I	3
EET-2131	Digital Communication Fundamentals	3
EET-2170	Signal Analysis	3
EET-2242	C and ASM Programming with Embedded Applications	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

<u>Fourth Semester</u>		<u>Credits</u>
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

 = Capstone course.

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 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-1240 or higher. MATH-1820/2820 may not be used to meet this requirement.
- GPA required: 2.0 admissions/core courses requirements, 2.5 overall.

(continued on next page)

Program Sequences

ELECTRONEURODIAGNOSTIC TECHNOLOGY (Continued)

Other Information:

- 16 students accepted per year.
- Applicants who are non-native speakers of English are 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 of and costs incurred for the TOEFL are the sole responsibility of the student. Visit www.ets.org for more information about the test. This test must be taken even if you have become an American citizen. Students should consider taking the following coursework to assist them in attaining the minimal scores: ESL-1331 English as a Second Language: Speaking and Listening English III and ESL-1480 TOEFL Preparation. For more information about English as a Second Language offerings at Cuyahoga Community College, visit <http://www.tri-c.edu/programs/liberalarts/esl/Pages/default.aspx>
- 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 Mike Cassida 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. Please refer to the health requirements for health career students.
- Accepted applicants must attend a group information session prior to Fall Semester.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>First Semester</u>		<u>Credits</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-1240	Contemporary Mathematics or higher ⁶	3
		15
<u>Second Semester</u>		<u>Credits</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 Session</u>		<u>Credits</u>
END-2400	Intraoperative Monitoring for Electroneurodiagnostic Technologists	2
END-2450	Neonatal/Pediatric Electroneurodiagnostic	3
END-2911	END Directed Practice II	2
		7
<u>Third Semester</u>		<u>Credits</u>
END-2300	Nerve Conduction Studies	3
END-2411	Neurophysiology of Electroencephalography/ Sleep Disorders ⁴	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-2320	Intermediate Nerve Conduction Studies ... OR	3
END-2350	Fundamentals of Polysomnography ⁵	4
END-2920	END Directed Practice III	4
END-2990	Electroneurodiagnostic Capstone C	1
	Communication...(Select from American Sign Language, English, Foreign Language, or Speech Communication) ⁵	3
		11 - 12
PROGRAM TOTAL		64 - 65

¹CHEM-1010 and 1020 may be taken in place of BIO-1100.

²Requires 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.

³BIO-234A and BIO-234B may be taken in place of BIO-2341.

⁴END 1440 will be accepted in place of END 2411.

⁵END 1410, 1421, 142L, & 1430 together will be accepted in place of END 2350.

⁶MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission through Fall 2019 and will also meet the College's math requirement for graduation through Summer 2021.

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 – 216-987-3688

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. 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Utilizing various verbal, non-verbal, written and electronic communication methods, one will be able to interact with and educate a diverse group of populations, which would include public administration, our colleagues and the community, to

provide direction and information about patient care or an event that meets the goals/objectives of the organization, while adhering to federal privacy standards.

2. Exhibit professional, ethical and compassionate behavior which follows department, city, state and federal regulations when interacting with diverse groups of patients, their families, healthcare professionals and the community to promote sound physical, psychological, spiritual health and safety at all times.
3. Assess the mechanism of injury and nature of illness, determine the best therapeutic modalities and evacuation means for the trauma and medical patient, and formulate and initiate the treatment plan needed to optimize the patient's outcome within a Paramedic Scope of Practice.
4. Perform pre-hospital and inter-facility assessments and treatments using advanced medical techniques and equipment available within a Paramedic 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 risks, implement solutions, analyze outcomes, and adapt to change within the dynamic field of Emergency Medical Services.
9. Values wellness and participates in activities to promote sound physical, psychological, and spiritual health in themselves, patients and their families, healthcare professionals and community members.
10. Sit for the National Registry of Emergency Medical Technician Exam, National Registry of EMTs Paramedic Certification Exam, University of Maryland Baltimore Campus Critical Care Paramedic Certification Exam and Flight Paramedic Certified Exam.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</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	–
		14
<u>Second Semester</u>		
BIO-2341	Anatomy and Physiology II	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	–
MA-1010	Introduction to Medical Terminology ²	2
MATH-1xxx	1000-level MATH course or higher ³	3
UST-1010	Introduction to Urban Studies	3
		15
<u>Third Semester</u>		
EMT-2330	Paramedic Theory I ⁴	6
EMT-2350	Paramedic Theory III ⁴	6

(continued on next page)

Program Sequences

EMERGENCY MEDICAL TECHNOLOGY (Continued)

PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	–
		15

<u>Fourth Semester</u>		<u>Credits</u>
EMT-2340	Paramedic Theory II ⁴	6
EMT-2360	Paramedic Theory IV ⁴	6
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	–
		16

<u>Summer Session</u>		<u>Credits</u>
EMT-2370	Paramedic Theory V C	5
		5
PROGRAM TOTAL		65

¹Requires passing Biology Placement Test or completion of BIO-1100 with a "C" or higher.

²MA-1020 will be accepted in place of MA-1010.

³Nursing Transfer or CSU BA in Public Safety Management (PSM) Transfer consider MATH-1240 or MATH-1410.

⁴Consecutive eight week course.

C = Capstone course.

ELECTIVES

<u>Additional Recommended Elective</u>		<u>Credits</u>
EMT department strongly recommends students take EMT-1330 Defensive Driving, in addition to required coursework. This course is not required to complete the degree.		
EMT-1330	Defensive Driving - EMT	1

FIRE - EMERGENCY MEDICAL SERVICES

Associate of Applied Science degree in Fire - Emergency Medical Services

This program is designed for individuals interested in entering the fire service to meet civil service entry requirements as a Firefighter I & 2-paramedic. Certification is provided through the Ohio Department of Public Safety and the National Registry of Emergency Medical Technicians (NREMT). The graduate may function as a firefighter and paramedic on the level required under Ohio Law to provided fire extinguishment and rescue services, basic and advanced medical care under the direction of a physician as well as provide supervision of operations in the fire - emergency services. A criminal background check must be completed through a program approved source prior to participation in clinical and field experiences in the EMT portion of the program. Tri-C is EMT Nationally Accredited (600596), State of Ohio EMS Accreditation (312) and holds a State of Ohio Fire Charter (003).

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-0990 Language Fundamentals II.
- Eligibility for ENG-1010 College Composition.
- Eligibility for MATH-0955 Beginning Algebra.
- EMT-1401 A&P for Paramedics
- 2.0 GPA

Other Information:

- It does not matter whether the Firefighting Certification is completed in the first, second or final segment. Firefighting is not required to become a Paramedic.
- EMT Basic Certification and completion of EMT-1401 or BIO-2331 and BIO-2341 are required to enter the Paramedic Certification program. Paramedic segment must be completed as EMT-2330, EMT-2350, EMT-2340, EMT-2360 and EMT-2370.
- EMT-1401 Anatomy & Physiology for Paramedics is required for enrollment into EMT-2330 Paramedic Theory I.
- BIO-2331 and BIO-2341 together will be accepted in place of EMT-1401.
- To enter the Fire Academy program:
 - Must be 18 years old and out of High School.
 - Must not be convicted of, under indictment for, pled guilty to, had a judicial finding of guilt of any of the following:
 - Fraud or material deception in applying for, or obtaining a certificate issued in accordance with this chapter.
 - A felony.
 - A misdemeanor involving moral turpitude.
 - A violation of any federal, state, county, or municipal narcotics law
 - Any act committed in another state that, if committed in Ohio, would constitute a violation set forth in this paragraph.
 - Must not be adjudicated mentally incompetent by a court of law.
 - Must not be currently engaged in illegal use of controlled substances, alcohol, or other habit forming drugs or chemical substances to an extent that it impairs the ability to perform the duties of a firefighter or safety inspector.
 - Must not have a beard as prescribed in the Ohio Administrative Code, Chapter 4121:1 -- 21.
 - Must provide evidence of a physical exam as required by the Ohio Revised prior to the first class date.
 - Must wear all NFPAA approved turnout gear as prescribed by the Ohio Administrative Code, Chapter 4121:1 - 21.
 - Must use self-contained breathing apparatus as prescribed in the Ohio Administrative Code, Chapter 4121:1 - 21.
 - Unattached (not currently employed on a Fire Department) student must provide, prior to the first class date, a copy of Cuyahoga Community College's Firefighter's Physical Agility Certification or attached student must provide a letter from the Fire Chief (on Department Letterhead) stating that the student has passed the Department's Physical Agility Test.

(continued on next page)

FIRE - EMERGENCY MEDICAL SERVICES
(Continued)

- Attached student must, prior to the first class date, provide an official letter from the appointing department authority accepting responsibility for all actions taken, injury, or liability incurred.
- Must provide proof of health and accident insurance coverage prior to the first class date.
- Must read and sign the attached waiver for liability (Assumption of Risk Form)
- Call 1-847-688-6888 if a Selective Service number is required on the College Admission Application.
- I. E. P. Acknowledgement Form.

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

1. Utilizing various verbal, non-verbal, written and electronic communication methods, one will be able to interact with and educate a diverse group of populations, which would include public administration, our colleagues and the community, to provide direction and information about patient care or an event that meets the goals/objectives of the organization, while adhering to federal privacy standards.
2. Exhibit professional, ethical and compassionate behavior which follows department, city, state and federal regulations when interacting with diverse groups of patients, their families, healthcare professionals and the community to promote sound physical, psychological, spiritual health and safety at all times.
3. Use strategic management and ethical decision making skills to recognize and apply practices of leadership in all aspects of department operations.
4. Assess the mechanism of injury and nature of illness, determine the best therapeutic modalities and evacuation means for the trauma and medical patient, and formulate and initiate the treatment plan needed to optimize the patient's outcome within a Paramedic Scope of Practice.
5. Perform pre-hospital and inter-facility assessments and treatments using advanced medical techniques and equipment available within a Paramedic Scope of Practice.
6. Respond to an incident, evaluate the situation, and implement safe appropriate strategies and tactics to save lives, protect property and the environment and mitigate the hazards in an effective and efficient manner.
7. Identify current and potential hazards and perform duties maintaining a safe environment for themselves, co-workers, patients and bystanders.
8. Apply critical thinking skills to identify risks, implement solutions, analyze outcomes, and adapt to change within the dynamic field of Fire and Emergency Medical Services.
9. Utilize organizational and leadership skills to effectively identify and resolve conflict, solve problems, and adapt to a fast-paced dynamic work setting.
10. Be prepared for the State of Ohio Emergency Medical Technician, Paramedic, and Firefighter 1 & 2 Certification Exams.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
EMT-1310	Cardiopulmonary Resuscitation	1
EMT-1320	Heavy Rescue	2
EMT-1330	Defensive Driving - EMT	1
FIRE-1100	Principles of Emergency Services	3
FIRE-1200	Principles of Fire and Emergency Services Safety and Survival	2
FIRE-1500	Fire Behavior and Combustion	2
FIRE-2321	Fire Protection Systems	2
		13
<u>Second Semester</u>		
EMT-1302	Emergency Medical Technician - Basic	6
EMT-130L	EMT Basic Practical Lab	1
EMT-1401	Anatomy and Physiology for Paramedics ¹	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		14
<u>Third Semester</u>		
EMT-2330	Paramedic Theory I ²	6
EMT-2350	Paramedic Theory III ²	6
MATH-1xxx	1000-level MATH course or higher	3
		15
<u>Fourth Semester</u>		
EMT-2340	Paramedic Theory II ²	6
EMT-2360	Paramedic Theory IV ²	6
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II ... OR	-
SPCH-1000	Fundamentals of Interpersonal Communication	-
		15
<u>Summer Session</u>		
EMT-2370	Paramedic Theory V C	5
POL-1010	American National Government ... OR	3
PSY-1010	General Psychology ... OR	-
PSY-101H	Honors General Psychology ... OR	-
SOC-1010	Introductory Sociology ... OR	-
SOC-101H	Honors Introductory Sociology ... OR	-
UST-1010	Introduction to Urban Studies	8
		8
	PROGRAM TOTAL	65

¹BIO-2331 and BIO-2341 together will be accepted in place of EMT-1401.

²Consecutive eight-week course.

Note: EMT Basic Short-Term Certificate can be applied to the Fire-EMS degree. The Paramedic Certificate of Proficiency may be applied to the Fire - EMS degree. Completed courses from the Associate of Applied Science degree in Fire Technology which meet the Fire - EMS degree requirements may be transferred. Completed courses from the Associate of Applied Science degree in Emergency Medical Technology which meet the Fire - EMS degree requirements may be transferred.

C = 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 directed practice.

Program Manager – 216-987-3688

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-0955.

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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, which follows department, city, state and federal regulations, when interacting with diverse groups of patients, their families, health care professionals, and community to promote sound physical, psychological, spiritual health and safety at all times..

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. Perform 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 Exam.

Suggested Semester Sequence		Credits
First Semester		
EMT-1302	Emergency Medical Technician - Basic	6
EMT-130L	EMT Basic Practical Lab	1
EMT-1401	Anatomy and Physiology for Paramedics ¹	<u>4</u>
		11
PROGRAM TOTAL		11

¹BIO-2331 and BIO-2341 will be accepted in place of EMT-1401. BIO-2331 and BIO-2341 required for the AAS in Emergency Medical Technology.

PARAMEDIC

Certificate of Proficiency

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 – 216-987-3688

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-0955 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.
- Students who completed EMT training at another institution must complete EMT-1401 A&P for Paramedics or BIO-2331 and BIO-2341 prerequisite for Paramedic program.
- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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, which follows department, city, state and federal regulations, when interacting with diverse groups of patients, their families, health care professionals, and the community to promote sound physical, psychological, spiritual health, and safety at all times.
3. Assess the mechanism of injury and nature of illness, determine the best therapeutic modalities and evacuation means for the trauma and medical patient and formulate and initiate the treatment plan needed to optimize the patient's outcome within Paramedic's scope of practice.
4. Perform 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</u>	<u>Semester</u>	<u>Credits</u>
EMT-1401	Anatomy and Physiology for Paramedics ¹	<u>4</u> 4
<u>First Semester</u>		<u>Credits</u>
EMT-2330	Paramedic Theory I * ²	6
EMT-2350	Paramedic Theory III ²	<u>6</u> 12
<u>Second Semester</u>		<u>Credits</u>
EMT-2340	Paramedic Theory II ²	6
EMT-2360	Paramedic Theory IV ²	<u>6</u> 12
<u>Summer Session</u>		<u>Credits</u>
EMT-2370	Paramedic Theory V	<u>5</u> 5
PROGRAM TOTAL		33

¹BIO-2331 & 2341 together will be accepted in place of EMT-1401.
² Consecutive eight-week course.

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-1100 or higher except with departmental permission

Other Information:

- Interview with Program Manager strongly recommended.

Program Learning Outcomes: The Associate of Applied Science degree and the Post-Degree Professional Certificate program are designed to prepare students to demonstrate the following learning outcomes:

- Effectively and efficiently contribute to an organization's environment, health and safety programs.
- Recognize, evaluate, and control workplace hazards and environmental stressors.
- Recognize and administer quality-assurance and quality-control protocols and methodologies to ensure data integrity and reliability for sampling, reporting, permitting, and compliance.
- Recognize, interpret, and explain environmental, health and safety laws and regulations.
- Evaluate environmental, health and safety conditions in the workplace and effectively and efficiently explain, both orally and in writing, the appropriate control methods.
- Evaluate, select, and apply environmental health and safety technologies and software applications.
- Articulate the value of a safe workplace and environmental stewardship.
- Effectively and efficiently transfer environmental, health and safety knowledge.

- Understand and demonstrate ethical behavior in environmental health and safety.

Note: Select option (a) or (b) before beginning this program.

Suggested Semester Sequence

First Semester		Credits
EHST-1301	Introduction to Environmental Technology	3
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	
MATH-1xxx	1000-level MATH course or higher	3
SPCH-1010	Fundamentals of Speech Communication...OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
		15

Second Semester		Credits
BIO-1050	Human Biology 2 ...AND	3
BIO-105L	Human Biology Laboratory	1
BIO-1060	Environment, Ecology, and Evolution 1...AND	3
BIO-106L	Environment, Ecology, and Evolution Lab	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

Third Semester		Credits
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

Fourth Semester		Credits
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

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.

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ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY (Continued)

OPTIONS

<u>(a) Option a (Environmental, Health and Safety Mgmt.)</u>		<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
PROGRAM TOTAL - OPTION A		62-63

<u>(b) Option b (Environmental Field Technology)</u>		<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
PROGRAM TOTAL - OPTION B		61-62

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Effectively and efficiently contribute to an organization's environment, health and safety programs.
2. Recognize, evaluate, and control workplace hazards and environmental stressors.
3. Recognize and administer quality-assurance and quality-control protocols and methodologies to ensure data integrity and reliability for sampling, reporting, permitting, and compliance.
4. Recognize, interpret, and explain environmental, health and safety laws and regulations.
5. Evaluate environmental, health and safety conditions in the workplace and effectively and efficiently explain, both orally and in writing, the appropriate control methods.
6. Evaluate, select, and apply environmental health and safety technologies and software applications.
7. Articulate the value of a safe workplace and environmental stewardship.
8. Effectively and efficiently transfer environmental, health and safety knowledge.
9. Understand and demonstrate ethical behavior in environmental health and safety.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
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
<u>Second Semester</u>		<u>Credits</u>
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

Program Sequences

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.

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.

Program Admissions Requirements:

- Successful completion of Fire Academy and appropriate state certification.

Other Information:

- Completion of the following courses via successful completion of the Tri-C Fire Academy: 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 prior learning assessment. Contact Mike Boyko at 216-987-5037.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
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.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
EMT-1310	Cardiopulmonary Resuscitation	1
EMT-1320	Heavy Rescue	2
EMT-1330	Defensive Driving - EMT	1
FIRE-1100	Principles of Emergency Services	3
FIRE-1200	Principles of Fire and Emergency Services Safety and Survival	2
FIRE-1500	Fire Behavior and Combustion	2
FIRE-2321	Fire Protection Systems	2
		<u>13</u>

<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-1xxx	1000-level MATH course or higher	3
		<u>19</u>

<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	
		<u>14</u>

<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
		<u>15</u>

PROGRAM TOTAL 61

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). 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.

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HEALTH INFORMATION MANAGEMENT TECHNOLOGY (Continued)

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.
- Completion of MATH-0955 with "C" or higher, or appropriate placement score to enroll in 1000-level Mathematics.
- Complete the following:
 BIO-2331 (or 2330) with "B" grade or higher
 IT-1010 (or CS-1020) with "B" grade or higher
 MA-1010 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.
- Core courses 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).

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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. Identify areas of quality assurance/Continuous Quality Improvement (CQI) that relate to risk management, utilization review and documentation compliance.

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 health care delivery system.
10. Utilize knowledge and skills of anatomy and physiology (A&P), 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.
11. Apply skills to find, build, restart and manage the system.
12. Apply management skills for the daily operations of Health Information Management department related entity.

Suggested Semester Sequence

<u>Program Admissions Requirements</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ²	4
ENG-1010	College Composition I ² ... OR	3
ENG-101H	Honors College Composition I	
HTEC-1120	Critical Thinking in Healthcare ^{1,2}	1
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
MA-1010	Introduction to Medical Terminology ³	<u>2</u>
		13

<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
HIM-2160	Coding with ICD-10-CM	<u>2</u>
		13

<u>Summer Session</u>		<u>Credits</u>
HIM-2130	Coding with CPT (Current Procedural Terminology)	2
HIM-2430	Medical Reimbursement Methodologies	<u>2</u>
		4

<u>Third Semester</u>		<u>Credits</u>
HIM-2200	Project Management for the Health Information Management Professional	2
HIM-2260	Coding with ICD-10-PCS	2
HIM-2312	Quality Assessment and Improvement	3
HIM-2410	Management Practices in Health Information	<u>2</u>
		9

(continued on next page)

Program Sequences

HEALTH INFORMATION MANAGEMENT TECHNOLOGY (Continued)

Fourth Semester		Credits
HIM-2401	Intermediate Coding	2
HIM-2440	Fundamentals of Healthcare Workflow and Process Analysis C	2
HIM-2851	Practicum I C	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	3
PROGRAM TOTAL		10
		64

¹PHIL-1000 may be taken in place of HTEC-1120.

²Grade of B or better in course.

³MA-1020 will be accepted in place of MA-1010.

C = Capstone course.

CANCER REGISTRAR

Post-Degree Professional Certificate

To be eligible for this program, students must have a minimum of an associate degree in a healthcare field of study. However, graduates of an accredited Health Information Management degree program are best suited for this certificate. Students who do not have a health care degree that includes an Introduction to Medical Terminology, two semesters of Anatomy and Physiology, and Pathophysiology will be required to complete these courses with a "B" grade or higher before applying for admission to the program.

Students who complete the Cancer Registrar post-degree certificate will be eligible to take the certification exam for Certified Tumor Registrar (CTR) provided by the National Association of Cancer Registrars' Association.

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

Program Admission Requirements:

- Students must have at a minimum an Associate Degree (or higher) in allied health or nursing from an ACE accredited College that includes:
 - MA-1010 Intro to Medical Terminology (or MA-1020 and MA-2010) with "B" grade or higher.
 - BIO-2331 A&P I with "B" grade or higher.
 - BIO-2341 A&P II with "B" grade or higher.
 - BIO-2600 Pathophysiology with "B" grade or higher.
- English-1010 or higher
- Math-1000 level or higher
- Time limit on biology courses is seven years unless the student is currently working in the healthcare field.
- 2.0 GPA
- 25 students accepted per year
- Graduates of an accredited HIM degree program are best suited for this certificate. Current credential is not required for admission to the program. Students who do not have a degree that includes the above courses must complete the courses before applying for the CTR program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Identify and comply with diverse workplace cultures, specifically in regard to dress code, code of conduct, and relationships with internal and external stakeholders
2. Apply federal, state, and organizational regulations in regard to confidentiality and security.
3. Explain the significance of applying clinical knowledge pertaining to diagnostics, treatment modalities, extent of disease, and surveillance in order to ensure complete and accurate cancer reporting.
4. Abstract and analyze health record information and convert to numerical data that aligns with industry principles and guidelines.
5. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration, and internal and external customers to promote quality oncology research and statistical outcomes.
6. Exhibit proficiency using Microsoft Office Suite (Excel, Word, Power Point, & Outlook) as well as other software technologies and discuss the potential of data exchange across systems.
7. Apply knowledge of industry recognized data fields to effectively utilize cancer registry software.
8. Effectively utilize virtual meeting software in a professional manner.
9. Differentiate between the various roles and reporting structures, while prioritizing tasks according to immediate needs.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
HIM-2500	Introduction to Cancer Registry and Disease Management	2
HIM-2510	The Cancer Disease Process and Management	3
HIM-2520	Oncology Coding and Staging	3
HIM-2530	Oncology Treatment and Coding	3
		11
<u>Second Semester</u>		
HIM-2540	Abstracting Principles and Methodologies for Oncology	3
HIM-2550	Database Analytics, Quality and Tracking	3
HIM-2560	Oncology Databases and Manuals	3
		9
<u>Summer Session</u>		
HIM-2870	Clinical Professional Practice Experience for Cancer Registry	2
		2
PROGRAM TOTAL		22

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	3
	Applications ... OR	
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 healthcare providers. They are knowledgeable in ICD-10-CM, 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: Students who choose the major code S702 for Medical Billing Specialist Short-Term Certificate do not need to fill out an application for health careers. This is a self-paced program; therefore, after meeting the following admission requirements, the student may begin taking first semester courses.

- High School Diploma/GED.
- Eligibility for ENG-1010.
- Eligibility for MATH-1000 level or higher.

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 to be eligible for the certificate.

(continued on next page)

Program Sequences

MEDICAL BILLING SPECIALIST (Continued)

- MA-1020 and MA-2010 must be completed within two years of program completion if not using Medical Terminology in current work environment.
- Coding courses expire after 12 months of completion of a program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>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	
MA-1020	Medical Terminology I	3
MATH-1xxx	1000-level MATH course or higher	3
		12
<u>Second Semester</u>		<u>Credits</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

HOSPITALITY MANAGEMENT (Culinary Art)

Associate of Applied Business degree in Hospitality Management with a concentration in Culinary Art

The culinary arts 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 and banquet management. The kitchen management and supervision component emphasizes menu planning for healthy living utilizing locally grown, sustainable agriculture, purchasing, cost control and profitability, 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.

Hospitality Management Center – 216-987-4081

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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**HOSPITALITY MANAGEMENT (Culinary Art)
(Continued)**

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>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
HOSP-1552	Introduction to Baking & Pastries	3
		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	
HOSP-1451	Contemporary Cuisine	4
HOSP-2700	Hospitality Purchasing	2
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		15

<u>Summer Session</u>		<u>Credits</u>
HOSP-1940	Culinary Arts/Professional Baking Field Experience	1
MATH-1xxx	1000-level MATH course or higher	3
		4

<u>Third Semester</u>		<u>Credits</u>
HOSP-1650	Dining Room Operations	2
HOSP-1940	Culinary Arts/Professional Baking Field Experience	1
HOSP-2330	Menus and Facilities Planning & Design	3
HOSP-2350	Restaurant Operations	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2560	Garde Manger	3
		15

<u>Fourth Semester</u>		<u>Credits</u>
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2651	Banquet Management & Production 	4
HOSP-2992	Culinary Evaluation & American Regional Cuisine 	2
HOSP-xxxx	HOSP elective course	2 - 3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		14 - 15
	PROGRAM TOTAL	63 - 64

 = Capstone course.

ELECTIVES

<u>Electives</u>		<u>Credits</u>
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

Certificate of Proficiency

The Personal Chef Certificate of Proficiency provides 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

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-0955

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Effectively communicate 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.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</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-1040	Customer Service	2
HOSP-1180	Event Planning Essentials	2
HOSP-1552	Introduction to Baking & Pastries	3
		15

<u>Second Semester</u>		<u>Credits</u>
HOSP-1451	Contemporary Cuisine	4
HOSP-1710	Doing Business as a Personal Chef	3
HOSP-2330	Menus and Facilities Planning and Design	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2700	Hospitality Purchasing	2
		15

PROGRAM TOTAL 30

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 the Hospitality Management with a concentration in Culinary Art degree program.

Hospitality Management Center - 216-987-4081

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>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
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 the Hospitality Management with a concentration in Culinary Art degree program.

Hospitality Management Center - 216-987-4081

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	<u>3</u>
	13

(continued on next page)

**PROFESSIONAL CULINARIAN/COOK
(Continued)**

<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	<u>2</u>
		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	<u>3</u>
		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 Accreditation Commission on Programs in Hospitality Administration (ACPHA) Programs. Practical industry related experiences are included.

Hospitality Management Center - 216-987-4081

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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-1481	Housekeeping and Facilities Management	3
HOSP-1540	Lodging Operations Lab	1
HOSP-1580	Front Office Operations	2
Arts & Hum	(see AAB/AAS degree requirements)	<u>3</u>
		15

<u>Summer Session</u>		<u>Credits</u>
HOSP-1960	Lodging/Tourism Management Field Experience	1
		-
		1

<u>Third Semester</u>		<u>Credits</u>
HOSP-1380	Dimensions of Tourism	3
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2480	Hospitality Law	3
HOSP-2700	Hospitality Purchasing	2
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		14

<u>Fourth Semester</u>		<u>Credits</u>
BADM-xxxx	Business Elective	3
HOSP-2380	Hospitality Marketing and Sales	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2580	Convention Management and Meeting Planning	2
HOSP-2862	Lodging and Tourism Management Experience <input type="checkbox"/>	1
Soc and Beh Sci	(See AAB/AAS degree requirements)	<u>3</u>
		15

PROGRAM TOTAL 60

Program Sequences

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Electives (Select two courses from the following)		<u>Credits</u>
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.

Hospitality Management Center - 216-987-4081

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

(continued on next page)

LODGING ROOMS DIVISION (Continued)

IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Intro 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-1481	Housekeeping and Facilities Management	3
HOSP-1580	Front Office Operations	2
HOSP-1960	Lodging/Tourism Mgmt. Field Experience	1
HOSP-2380	Hospitality Marketing and Sales	3
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2480	Hospitality Law	<u>3</u>
		18
PROGRAM TOTAL		33

**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.

Hospitality Management Center - 216-987-4081

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>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
HOSP-1552	Introduction to Baking & Pastries	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
ACCT-1020	Applied Accounting	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
HOSP-1451	Contemporary Cuisine	4
HOSP-1650	Dining Room Operations	2
HOSP-1680	Beverage Management	2
IT-1010	Intro to Microcomputer Applications ...OR	3
IT-101H	Honors Intro to Microcomputer Applications	-
		17

<u>Summer Session</u>		<u>Credits</u>
HOSP-1950	Restaurant/Food Service Management Field Experience	1
MATH-1xxx	1000-level MATH course or higher	<u>3</u>
		4

<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ...OR	3
ENG-102H	Honors College Composition II	
HOSP-2350	Restaurant Operations	3
HOSP-2360	Restaurant Marketing	2
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2700	Hospitality Purchasing	2
		13

<u>Fourth Semester</u>		<u>Credits</u>
HOSP-2370	Restaurant/Foodservice Entrepreneurship <input type="checkbox"/>	<u>3</u>
HOSP-2500	Hospitality Cost Control	3
HOSP-2871	Food and Beverage Management Experience <input type="checkbox"/>	2
Arts & Hum	(See AAB/AAS degree requirements)	3
Soc & Beh Sci	(See AAB/AAS degree requirements)	<u>3</u>
		14

PROGRAM TOTAL

63

= 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.

Hospitality Management Center - 216-987-4081

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	Credits
<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
MATH-1xxx	1000-level MATH course or higher	3
		15
<u>Second Semester</u>		
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
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	3
		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 credit hours in Chemical dependency course work and complete 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 requirements listed. Contact Health Careers Enrollment Center for an application 216-987-4247.

- High School Diploma/GED highly recommended, but not required.
- Eligibility for ENG-1010 College Composition I.
- Complete the following in sequence: HS-1300 and HS-1850 ("C" grade or higher in each).

Other Information:

- Human Service students must sign and abide by the Human Service Code of Conduct during the first week of enrollment in the HS-1300 course.
- Complete BCI (background) check **at least 3 months** prior to enrollment in the HS-1850 practicum course. Log onto: <http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html> (see page 73).
- Students may enroll in only the following courses prior to completing a BCI: HS-1104, HS-1110. Log into <http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html>
- Student must maintain a 2.00 GPA in all HS courses.
- Requirements listed are the same for both Generalist and Alcohol/Chemical Dependency options.
- PSY-2070 Behavior Modification recommended for the Generalist Option. PSY-2080 Abnormal Psychology recommended for the Chemical Dependency Option
- Schedule must be approved by HS faculty advisor prior to resignation for second semester and beyond.

(continued on next page)

HUMAN SERVICES (Continued)

- Non-majors may enroll in HS courses for which they have satisfied the prerequisite.
- Students re-entering after a one year absence from the Human Services Program will be required to complete another BCI. Log onto BCI site listed above.
- Students must purchase Health Careers Liability Insurance from the Enrollment Center prior to enrolling in HS-1850.
- Program Manager may be reached at 216-987-4454. Contact for additional information.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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).

<u>First Semester</u>		<u>Suggested Semester Sequence</u>	<u>Credits</u>
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		
HS-1101	Foundations of Substance Abuse, Addiction, and Group Work		4
HS-1300	Introduction to Human Services		3
PSY-1010	General Psychology ... OR		3
PSY-101H	Honors General Psychology		-
			13

<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)	
HS-1200	Treatment Modalities and Diversity Issues in Chemical Dependency (a)	
HS-1210	Prevention and Chemical Dependency (a)	
HS-1220	Diagnostic Tools and Legal Considerations (b)	
HS-1850	Introduction to Human Services Principles and Practices	5
PHIL-1000	Critical Thinking	3
		11

<u>Third Semester</u>		<u>Credits</u>
HS-2200	Ethics in Chemical Dependency (a)	3
HS-2300	Family Theory and Services (b)	
HS-2600	Systems Approach to Case Management	4
HS-2850	Human Services Principles and Practices I	5
HS-xxxx	Human Services elective	2
SPCH-1010	Fundamentals of Speech Communication... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	-
		14

<u>Fourth Semester</u>		<u>Credits</u>
BIO-1050	Human Biology	3
BIO-105L	Human Biology Laboratory	1
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 ¹	3
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	-
		16
	Program Subtotal	54

<u>OPTIONS</u>		<u>Credits</u>
<u>(A) Alcohol/Chemical Dependency</u>		
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
	PROGRAM TOTAL - OPTION A	63

<u>(B) Generalist Option</u>		<u>Credits</u>
HS-1110	Crisis Intervention and Child Abuse Issues	3
HS-1220	Diagnostic Tools and Legal Considerations	4
HS-2300	Family Theory and Services	4
	PROGRAM TOTAL - OPTION B	65

¹For students planning to transfer, highly recommend MATH-1410 Elementary Probability and Statistics I.

C = Capstone course.

Program Sequences

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 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
- Eligibility for ENG-1010
- Eligibility for MATH-1410 (appropriate score on Math Placement test or MATH-1240 or MATH-0965 with "C" or higher)

Other Information:

- Requires students to participate in several co-op experiences.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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		Credits
<u>First Semester</u>		
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
IT-1050	Programming Logic	3
VC&D-1015	Digital Studio Basics	3
		15

<u>Second Semester</u>		Credits
ACCT-1310	Financial Accounting	4
BADM-2010	Business Communications ...OR	3
BADM-201H	Honors Business Communications	
IT-1150	Introduction to Web Programming	3
MATH-1410	Elementary Probability and Statistics I ¹ ...OR	3
MATH-2010	Introduction to Discrete Mathematics	4
VC&D-1430	2D Design	3
		17

<u>Summer Session</u>		Credits
BADM-2830	Cooperative Field Experience	1
		1

<u>Third Semester</u>		Credits
ECON-2610	Principles of Macroeconomics	4
IT-2351	Enterprise Database Systems	4
IT-2620	Visual Basic .NET Programming ...OR	4
IT-2680	Visual C# .NET	
IT-2700	Systems Analysis and Design	3
		15

<u>Fourth Semester</u>		Credits
ECON-2620	Principles of Microeconomics ...OR	4
MARK-2010	Principles of Marketing ...OR	3
BADM-xxxx	Business Elective	3 - 4
IT-2600	E-Business Programming Technologies C	3
PHIL-2020	Ethics ...OR	3
PHIL-202H	Honors Ethics	
SPCH-1010	Fundamentals of Speech Communication... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
		12 - 13
PROGRAM TOTAL		60 - 61

¹Students who do not place into MATH-1410 on the assessment test must take MATH-1240 or MATH-0965 as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.

C = Capstone course.

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 websites), 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>Suggested Semester Sequence</u>		<u>Credits</u>
<u>Summer Session</u>		
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	<u>3</u> 6
<u>First Semester</u>		
IT-1150	Introduction to Web Programming	3
IT-2351	Enterprise Database Systems	4
IT-2620	Visual Basic .NET Programming ...OR	4
IT-2680	Visual C# .NET	-
		11
<u>Second Semester</u>		
IT-2600	E-Business Programming Technologies	3
IT-2700	Systems Analysis and Design	<u>3</u> 6
	PROGRAM TOTAL	23

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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

INFORMATION TECHNOLOGY – NETWORKING SOFTWARE (Continued)

Suggested Semester Sequence		
<u>Summer Session</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
IT-1050	Programming Logic	3
ITNT-2300	Networking Fundamentals	3
		14
<u>Second Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
ITNT-2310	TCP/IP	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-2990	Networking Capstone C	3
ITXX-2xxx	2000 level ITNT elective	3
xxxx	Natural Science (lecture)	3
		10 - 12
	PROGRAM TOTAL	60 - 62
<u>Electives</u>		
ITNT-2420	Network Administration II	3
IT-2830	Cooperative Field Experience	1 - 3

C = Capstone course.

See pages 146-148 for the Computer Networking Hardware degree, Computer Maintenance Technology Certificate, and Cisco 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

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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 use appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing). Work as part of a development team using industry standards and guidelines.

Suggested Semester Sequence		
<u>First Semester</u>		
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	3
IT-1025	Information Technology Concepts for Programmers	3

(continued on next page)

INFORMATION TECH. - PROGRAMMING AND DEVELOPMENT (Continued)

IT-1050	Programming Logic	3
SPCH-1010	Fundamentals of Speech Communication... OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
BADM-2010	Business Communications ...OR	3
BADM-201H	Honors Business Communications	
IT-1150	Introduction to Web Programming	3
IT-2650	Java Programming	4
IT-2700	Systems Analysis and Design	3
MATH-1410	Elementary Probability and Statistics I ¹ ...OR	3
MATH-2010	Introduction to Discrete Mathematics	<u>4</u>
		17

<u>Summer Session</u>		<u>Credits</u>
IT-2830	Cooperative Field Experience ²	<u>1</u>
		1

<u>Third Semester</u>		<u>Credits</u>
IT-2320	Interactive Internet Programming	4
IT-2351	Enterprise Database Systems	4
IT-2660	Data Structures & Algorithms	4
Soc & Beh Sci/Nat Sci (See AAB/AAS degree requirements)		<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
BADM-1300	Small Business Management ...OR	4
ACCT-1310	Financial Accounting	4
IT-2030	ASP.NET Web Programming C	4
ITXX-xxxx	Programming Elective	3 - 4
PHIL-2020	Ethics ...OR	3
PHIL-202H	Honors Ethics	-
		14 - 15
	PROGRAM TOTAL	62 - 63

¹Students who do not place into MATH-1410 on the assessment test must take MATH-1240, or MATH-1270, or MATH-1280 as a prerequisite for this program. MATH-2010 can be taken in place of MATH-1410. Highly recommended for students planning to transfer to a four year university. MATH-1800/1820 may not be used to meet this requirement.

²Students who cannot complete a co-op experience due to a fulltime work commitment can request a waiver of IT-2830 Co-op or request a substitution of another course to meet this requirement.

C = Capstone course.

<u>Programming Electives</u>		<u>Credits</u>
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 above):		
IT-1100	Fundamentals of iOS Application Development	3
IT-2100	iOS Application Programming	4
IT-2110	Android Mobile App Development	3
IT-2600	E-Business Programming Technologies	3
IT-2620	Visual Basic .NET Programming	4
IT-2670	C/C++ Programming Language	4
IT-2680	Visual C#.NET	4

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

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 use appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing). Work as part of a development team using industry standards and guidelines.

<u>Suggested Semester Sequence</u>		
<u>First Semester</u>		<u>Credits</u>
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3
IT-1150	Introduction to Web Programming	<u>3</u>
		9
<u>Second Semester</u>		<u>Credits</u>
IT-2320	Interactive Internet Programming	4
IT-2351	Enterprise Database Systems	4
IT-2650	Java Programming	<u>4</u>
		12
<u>Third Semester</u>		<u>Credits</u>
IT-2030	ASP.NET Web Programming	4
IT-2660	Data Structures & Algorithms	4
IT-2700	Systems Analysis and Design	<u>3</u>
		11
	PROGRAM TOTAL	32

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. Certificate is stackable with the Programming and Development degree.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	<u>3</u> 6
<u>Second Semester</u>		
IT-2351	Enterprise Database Systems	4
IT-2650	Java Programming	<u>4</u> 8
<u>Third Semester</u>		
IT-2100	iOS Application Programming	4
IT-2110	Android Mobile App Development	<u>3</u> 7
PROGRAM TOTAL		21

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.

Program Admission Requirements:

- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Session</u>		
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	<u>3</u> 6
<u>First Semester</u>		
IT-1150	Introduction to Web Programming	3
IT-2351	Enterprise Database Systems	4
IT-2650	Java Programming	<u>4</u> 11
<u>Second Semester</u>		
IT-2030	ASP.NET Web Programming ...OR	4
IT-2600	E-Business Programming Technologies	3
IT-2320	Interactive Internet Programming	<u>4</u> 7 - 8
PROGRAM TOTAL		24 - 25

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-0955 or higher

Other Information:

- Options available in Integrated Systems Maintenance - Fluid Power and Programmable Logic Controllers, Environmental Systems Maintenance - Boiler, HVAC, and Welding.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
ISET-1100	Welding Blue Print Reading (c)	
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I	3
ISET-1450	Heating Ventilation Air Conditioning/ Refrigeration I (b)	
MATH-1240	Contemporary Mathematics or higher	<u>3</u>
		13

<u>Second Semester</u>		<u>Credits</u>
ISET-1320	Fundamentals of Fluid Power (a)	
ISET-1340	Industrial Piping and Tubing	2
ISET-1420	Applied Electricity II	3
ISET-1460	Fundamental Boiler Technology (b)	
ISET-2100	Gas Metal Arc Welding (MIG) (c) ... OR	
ISET-2120	Shielded Metal Arc Welding (STICK) (c)	
IT-1010	Intro to Microcomputer Applications ... OR	3
IT-101H	Honors Intro to Microcomputer Applications	–
		8

<u>Summer Session</u>		<u>Credits</u>
ISET-2200	Industrial Motor Controls	3
SPCH-1000	Fundamentals of Interpersonal Communication	<u>3</u>
		6

<u>Third Semester</u>		<u>Credits</u>
ENG-2151	Technical Writing	3
ISET-2110	Gas Tungsten Arc Welding (TIG) (c) ... OR	
ISET-2130	OxyFuel Gas Welding (c)	
ISET-2240	Applied National Electric Code	3
ISET-2450	Heating Ventilation Air Conditioning/ Refrigeration II (b)	
ISET-2500	Programmable Logic Controllers Maintenance I	3
MET-2300	Fluid Power (a)	
PSY-1050	Introduction to Industrial/Organizational Psychology	<u>3</u>
		12

<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 (a) ¹	
ISET-2520	Programmable Logic Controllers Maintenance III (a) ¹	
ISET-2460	Applied Boiler Technology (b)	
ISET-2990	Reliability Centered Maintenance C	<u>3</u>
		12

Program Subtotal 51
(continued on next page)

Program Sequences

INTEGRATED SYSTEMS ENGINEERING TECHNOLOGY (Continued)

¹Consecutive eight week course.

C = Capstone course.

OPTIONS

(A) Integrated Systems 8

		<u>Credits</u>
Fluid Power and Programmable Logic Controllers Option (a)		
ISET-1320	Fundamentals of Fluid Power	2
MET-2300	Fluid Power	3
ISET-2510	Programmable Logic Controllers Maintenance II	2
ISET-2520	Programmable Logic Controllers Maintenance III	2
PROGRAM TOTAL - OPTION A		60

(B) Environmental Systems

		<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
PROGRAM TOTAL - OPTION B		60

(C) Integrated Systems

Welding, Option (c): To complete this option, students must complete ISET-1100 & two of the four welding courses listed below.

		<u>Credits</u>
ISET-1100	Welding Blue Print Reading	2
ISET-2100	Gas Metal Arc Welding (MIG) ... OR	4
ISET-2120	Shielded Metal Arc Welding (STICK)	4
ISET-2110	Gas Tungsten Arc Welding (TIG) ... OR	4
ISET-2130	OxyFuel Gas Welding	4
PROGRAM TOTAL - OPTION C		61

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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-1100	Welding Blue Print Reading	2
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I ¹	3
ISET-1420	Applied Electricity II	<u>3</u>
		12

Second Semester

		<u>Credits</u>
EET-1100	Introduction to Robotics	2
ISET-1320	Fundamentals of Fluid Power	2
ISET-2120	Shielded Metal Arc Welding (STICK)	4
ISET-2200	Industrial Motor Controls	<u>3</u>
		11

Summer Session

		<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	<u>2</u>
		7

PROGRAM TOTAL 30

¹ISET-1410, 1st 8 week course, must be completed before ISET-1420. Concurrent enrollment in ISET-1300.

²ISET-2500 PLC Maintenance I, 1st 5 or 8 week course, must be completed before ISET-2510 PLC Maintenance II.

INDUSTRIAL WELDING

Certificate of Proficiency

This program provides basic training for students who want to acquire the fundamental skills of Stick, MIG, TIG, and OxyFuel welding and introduces additional industry technologies: programming of welding robots, fabrication, nondestructive testing techniques, metallurgy, and workplace safety. Students have the potential to earn three nationally recognized certifications. At the conclusion of the MIG, TIG, and Stick welding classes, students submit a test piece (between 1F and 4G) for American Weld Society (AWS) certification evaluation.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for MATH-0955 Beginning Algebra

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Use effective interpersonal, communication, and professional skills to work with welding, production, engineering, and quality control teams.
2. Comply with industry safety guidelines.
3. Apply TIG, MIG, and Stick processes to join metal.
4. Apply oxygen and fuel cutting skills.
5. Add and Subtract decimals and fractions and convert decimals to fractions.
6. Train operators, troubleshoot equipment, analyze root causes and identify corrective actions of weld issues.
7. Work with production and engineering teams to develop equipment and processes for product development, production needs, and customer expectations.
8. Use practical knowledge/experience of fabricating, blue print reading, and welding skills to complete most welding projects.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
HLTH-1230	Standard First Aid and Personal Safety	<u>1</u>
ISET-1100	Welding Blue Print Reading	2
ISET-2100	Gas Metal Arc Welding (MIG)	4
ISET-2120	Shielded Metal Arc Welding (STICK)	4
MET-1300	Engineering Materials and Metallurgy	3
SPCH-1000	Fundamentals of Interpersonal Communication	<u>3</u>
		17
<u>Second Semester</u>		
ISET-2110	Gas Tungsten Arc Welding (TIG)	4
ISET-2130	OxyFuel Gas Welding	4
ISET-2140	Non-Destructive Testing	3
ISET-2150	Robotic Welding	3
ISET-2160	Structural Fabrication	<u>4</u>
		18
	PROGRAM TOTAL	35

INTRODUCTORY WELDING

Short-Term Certificate

This program provides basic training for students who want to acquire the fundamental skills of Stick, MIG, TIG and OxyFuel welding technologies and prepares students for careers in the welding industry with the potential to earn three nationally recognized certifications. At the conclusion of the MIG, TIG, and Stick welding classes, students submit a test piece (between 1F and 4G) for American Weld Society (AWS) certification evaluation.

Program Admission Requirements:

- High School Diploma/GED
- Eligibility for MATH-0955 Beginning Algebra

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Use effective interpersonal, communication, and professional skills to work with welding, production, engineering, and quality control teams.
2. Comply with industry safety guidelines.
3. Apply TIG and MIG to processes to join metal.
4. Read basic welding blueprints and interpret welding symbols.
5. Apply oxygen and fuel cutting skills.
6. Add and subtract decimals and fractions and convert decimals to fractions.
7. Use simple measuring instruments, such as a tape measure, caliper, protractor, and micrometer.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
ISET-1100	Welding Blue Print Reading ¹	2
ISET-2110	Gas Tungsten Arc Welding (TIG) ¹	4
ISET-2120	Shielded Metal Arc Welding (STICK) ¹	<u>4</u>
		10
<u>Second Semester</u>		
ISET-2100	Gas Metal Arc Welding (MIG)	4
ISET-2130	OxyFuel Gas Welding	<u>4</u>
		8
	PROGRAM TOTAL	18

¹Consecutively scheduled courses.

WELDING TECHNOLOGY

Short-Term Certificate

This program provides additional workplace skills to students who have already been trained in the fundamentals of welding. Students will gain familiarity with additional workplace safety, programming of welding robots, metallurgy, fabrication, and some nondestructive testing techniques.

Program Admission Requirements:

- High School Diploma/GED
- Completion of Introductory Welding certificate or equivalent industry certifications.
- "C" or better in ISET-1100, ISET-2100, ISET-2110, ISET-2120 or equivalent experience.

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Use effective interpersonal, communication, and professional skills to work with welding, production, engineering, and quality control teams.
2. Comply with industry safety guidelines.
3. Train operators, troubleshoot equipment, and analyze root causes and identify corrective actions of weld issues.
4. Work with production and engineering teams to develop equipment and processes for production needs, and customer expectations.
5. Use practical knowledge/experience of fabricating, blue print reading, and welding skills to complete most welding projects.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
HLTH-1230	Standard First Aid and Personal Safety	1
ISET-2130	OxyFuel Gas Welding	4
MET-1300	Engineering Materials and Metallurgy	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		11
<u>Second Semester</u>		
ISET-2140	Non-Destructive Testing	3
ISET-2150	Robotic Welding	3
ISET-2160	Structural Fabrication	4
		10
	PROGRAM TOTAL	21

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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Session</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
		14
<u>First Semester</u>		
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
		12

(continued on next page)

INTERIOR DESIGN (Continued)

<u>Second Semester</u>		<u>Credits</u>
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	<u>3</u>
		12
<u>Third Semester</u>		<u>Credits</u>
ART-1050	Drawing I	3
ART-1091	Color Theory and Application	3
INTD-2300	Interior Design Studio I	3
INTD-2471	Professional Practice of Interior Design	2
VC&D-1015	Digital Studio Basics	<u>3</u>
		14
<u>Fourth 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	
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	65

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Session</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 (Continued)

<u>Fourth Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
MET-2500	Fundamentals of Products Development and Manufacture  ... OR	3
MET-2190	Additive Manufacturing Project Based/ Team Oriented Capstone	3
MET-xxxx	Elective	3
PHYS-1220	College Physics II	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3 14
PROGRAM TOTAL		60 - 63

¹MATH-1580 & MATH-1610 will be accept in place of MATH-1530 & 1540.

²MET-1220 & 1200 together will be accepted in place of MET-1230.

³Students 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.

⁴PHYS-2310 & PHYS-2320 will be accepted in place of PHYS-1210 & PHYS-1220. PHYS-2310 & PHYS-2320 are recommended for students planning to transfer

 = Capstone course.

ELECTIVES

<u>Automation Engineering Technology</u>		<u>Credits</u>
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

<u>Drafting & Design Engineering Technology</u>		<u>Credits</u>
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

<u>Quality Engineering Technology</u>		<u>Credits</u>
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

<u>Additive Manufacturing</u>		<u>Credits</u>
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

**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 AM. 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:

- For admission information, reach us at 216-987-2769.
- High School Diploma or GED
- ENG-0990 Language Fundamentals II
- MATH-0955 Beginning Algebra or appropriate Math placement score

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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3D DIGITAL DESIGN & MANUFACTURING TECHNOLOGY (Continued)

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-1250	Introduction To Additive Manufacturing	3
MET-1260	Product Ideation and Design	3
MET-xxxx	Elective	<u>3</u>
		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-2601	3D Solid Modeling	3
MET-xxxx	Elective	<u>3</u>
		14

<u>Summer Session</u>		<u>Credits</u>
MET-2190	Additive Manufacturing Project Based/ Team Oriented Capstone	3
MET-2941	Additive Manufacturing Internship	1
MET-xxxx	Elective	<u>2</u>
		6
	PROGRAM TOTAL	32

ELECTIVES

<u>Recommended elective courses:</u>		<u>Credits</u>
MET-1120	Computer Applications and Programming	2
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1400	CNC Programming and Operation	3
MET-2041	CAD II & GD&T	3
MET-2941	Additive Manufacturing Internship	1 - 4

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:

- For admission information, reach us at 216-987-2769.
- High School Diploma/GED
- Completion of ENG-0990 or higher.
- Completion of MATH-0955 or higher or appropriate math score.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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DIGITAL DESIGN & PRODUCT INNOVATION (Continued)

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
		<u>12</u>
<u>Second Semester</u>		<u>Credits</u>
MET-1100	Technology Orientation	2
MET-xxxx	Elective	2
		<u>4</u>
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:

- For admission information, reach us at 216-987-2769.
- High School Diploma/GED
- Completion of ENG-0990 or higher.
- Completion of MATH-0955 or higher.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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-1300	Engineering Materials and Metallurgy	3
MET-2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET-2601	3D Solid Modeling	3
		<u>9</u>
<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	1
		<u>7</u>
PROGRAM TOTAL		16

DIGITAL DESIGN & PRODUCT INNOVATION (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</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>		
MET-1100	Technology Orientation	2
MET-xxxx	Elective	<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-0955 or higher.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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	<u>3</u>
		9
<u>Second Semester</u>		
MET-1400	CNC Programming and Operation	3
MET-2190	Additive Manufacturing Project Based/ Team Oriented Capstone	3
MET-2940	Additive Manufacturing Internship I	<u>1</u>
		7
PROGRAM TOTAL		16

Program Sequences

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>First Semester</u>	Suggested Semester Sequence	<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HLTH-1230	Standard First Aid and Personal Safety	1
MATH-1530	College Algebra or higher	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD ¹	3
		15

<u>Second Semester</u>		<u>Credits</u>
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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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, concepts, and utilize appropriate math, measurement, data collection 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.

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COMPUTER-INTEGRATED
MANUFACTURING (CIM) (Continued)

- 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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
MATH-1530	College Algebra or higher	4
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
		14
<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-2422	Fundamentals of Engineering Economics	3
MET-xxxx	Elective	1 - 3
		16 - 18
	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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

- 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.
- 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.

- 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.
- 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.
- 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.
- 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-1530	College Algebra or higher	4
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
		14
<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-2000	CAD/CAM Processes	3
MET-2422	Fundamentals of Engineering Economics	3
MET-xxxx	Elective	1 - 3
		16 - 18
	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 Admissions Requirements:

- High School Diploma/GED
- English placement test
- Mathematics placement test

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
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. 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-1530	College Algebra or higher	4
MET-1100	Technology Orientation	2
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
		15
<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-2422	Fundamentals of Engineering Economics	3
MET-2500	Fundamentals of Products Development and Manufacture	3
MET-2730	Lean Manufacturing	3
		16
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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning outcomes:

1. 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.
2. Apply basic business skills in achieving organizational goals including: strategic planning, inventory management, software, database skills, and customer relations and negotiation skills.
3. 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.
4. 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.
5. Identify markets and customers; execute, evaluate, and control marketing mix elements (product, price, place, profit, promotion) to meet project goals.

Suggested Semester Sequence		Credits
<u>First Semester</u>		
BADM-1020	Introduction to Business	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	
SPCH-1010	Fundamentals of Speech Communication	3
		16
<u>Second Semester</u>		
ACCT-1310	Financial Accounting	4
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MARK-2010	Principles of Marketing	3
MATH-1240	Contemporary Mathematics or higher	3
		13
<u>Third Semester</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 Logic ... OR	3
PHIL-2060	Business Ethics	-
		16

Fourth Semester		Credits
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		62

C = Capstone course.

MASSAGE THERAPY

Associate of Applied Science degree in Massage Therapy

The 16-month 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 complete over 1,000 massage therapy instruction hours. Students can sit for the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) before completing the degree by receiving a Certificate of Proficiency in Massage Therapy. All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx exam. 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 from the educational institution to the Massage Therapy Program. Hand delivered and 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-1321, English as a Second Language: Reading and Writing III, and ESL-1331, Speaking English as a Second Language III before acceptance to the Massage Therapy Program.
- Eligibility for MATH-1100, or completion of MATH-0955 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 Certificate and Degree programs).

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MASSAGE THERAPY (Continued)

- 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 sessions held prior to the start of fall semester and early in the 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.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Tri-C Health Careers criminal background check required before acceptance to the Massage Program (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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the

embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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.
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.

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MASSAGE THERAPY (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MA-1010	Introduction to Medical Terminology	2
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
		16
<u>Second Semester</u>		
EMT-1310	Cardiopulmonary Resuscitation	1
MT-1272	Somatic Studies II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1331	Massage Therapy II	3
MT-2350	Massage Therapy Clinic I	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		18
<u>Summer Session</u>		
MATH-1100	Mathematical Explorations or higher	3
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 C	1
		12
<u>Third Semester</u>		
BADM-1300	Small Business Management	4
MT-2311	Advanced Massage Therapy	3
MT-2380	Advanced Massage Therapy Clinic	3
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	-
		17
	PROGRAM TOTAL	63

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 advanced bodywork training which enhances a massage therapist's career by preparing them for positions in specialized areas of massage therapy.

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.

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).

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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Program Sequences

ADVANCED MESSAGE THERAPY (Continued)

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 Session</u>		<u>Credits</u>
MT-1321	Functional Assessment in Massage Therapy	2
MT-2200	Medical Massage	2
		4
<u>First Semester</u>		<u>Credits</u>
MT-2311	Advanced Massage Therapy	3
MT-2380	Advanced Massage Therapy Clinic	3
		6
	PROGRAM TOTAL	10

MESSAGE 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. 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-1321, English as a Second Language: Reading and Writing III, and ESL-1331, Speaking English as a Second Language III before acceptance to the Massage Therapy Program.
- Eligibility for MATH-1100, or completion of MATH-0955 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 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.
- 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.
- 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.
- Accepted applicants are required to attend group orientation sessions held prior to the start of fall semester and early in the 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.
- 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.

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MASSAGE THERAPY (Continued)

- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Massage Therapy License and the NCBTMB.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
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	<u>3</u>
		14
<u>Second Semester</u>		
		<u>Credits</u>
MT-1272	Somatic Studies II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1331	Massage Therapy II	3
MT-2350	Massage Therapy Clinic I	<u>3</u>
		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	<u>1</u>
		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. 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, and ESL-1330, Speaking English as a Second Language III before acceptance to the Massage Therapy Program.
- 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.

- 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.
- Accepted applicants are required to attend group orientation sessions held prior to the start of fall semester and early in the 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.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Name change court documents are required. See the Massage Therapy Application Packet for details.
- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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MASSAGE THERAPY (Continued)

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
		11
<u>Second Semester</u>		<u>Credits</u>
MT-1272	Somatic Studies II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1331	Massage Therapy 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, Energy industry, as well as in research and development laboratories. Skills in the area of creating and interpreting engineering drawings and the practices and procedures of manufacturing and principles of product design are emphasized.

Program Admission Requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H
- Complete MATH-1530
- Complete the following: MET-1100, MET-1230, MET-1240

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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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Program Sequences

MECHANICAL ENGINEERING TECHNOLOGY (Continued)

- 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.
- Engage in life-long learning to adapt to innovation and change.
- Model ethical behavior in professional engagements.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1530	College Algebra ¹	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	<u>3</u>
		14
<u>Second Semester</u>		
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1540	Trigonometry	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1601	Technical Statics ³	3
PHYS-1210	College Physics I ²	<u>4</u>
		16
<u>Third Semester</u>		
MET-1300	Engineering Materials and Metallurgy	3
MET-1621	Technical Dynamics ⁴	3
MET-2041	CAD II & GD&T	3
MET-2200	Strength of Materials ⁵	3
MET-2240	Mechanical Engineering Lab	1
MET-2300	Fluid Power ⁶	<u>3</u>
		16
<u>Fourth Semester</u>		
HLTH-1230	Standard First Aid and Personal Safety	1
MET-2601	3D Solid Modeling	3
MET-2700	Machine Design C	4
PHYS-1220	College Physics II	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		<u>3</u>
		15
	PROGRAM TOTAL	61

¹MATH-1610 will be accepted in place of both MATH-1530 and MATH-1540 but an additional 2 credit hours of general electives may be needed to meet degree requirements.

³MET-2610 will be accepted in place of MET-1601 to meet this requirement. MET-2610, MET-2620, and MET-2630 are recommended for students planning to transfer.

²PHYS-2310 & PHYS-2320 will be accepted in place of PHYS-1210 & PHYS-1220, PHYS-2310 & 2320 are recommended for students planning to transfer.

⁴MET-2620 will be accepted in place of MET-1621 to meet this requirement.

⁵MET-2630 will be accepted in place of MET-2200 to meet this requirement.

⁶MET-2320 will be accepted in place of MET-2300 to meet this requirement.

C = Capstone course.

MEDIA ARTS AND FILMMAKING

Associate of Applied Business degree in Media Arts and Filmmaking

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 develop familiarity and expertise in their chosen craft. The program offers specialty training in Digital Cinematography, Editing, Motion Graphics, Set Operations, 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.


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

- Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.
- 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.
- Apply the basics of digital video filmmaking production following set protocol including camera operation, lighting, audio production and producing skills.
- Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.

(continued on next page)

MEDIA ARTS AND FILMMAKING
(Continued)

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.

<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	
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
MARS-1180	Introduction to Media Arts and Filmmaking	3
RAT-1100	Sound Recording and Design	3
VCPH-1261	Photography I ¹	3
VCPH-1450	Digital Imaging I	3
		18
<u>Second Semester</u>		
JMC-1310	Film Appreciation	3
MARS-1120	Media Arts and Studies Colloquium	1
MARS-2110	Editing	3
MARS-2180	Digital Cinematography	3
MARS-2480	Motion Graphics	3
MATH-1xxx	1000-level MATH course or higher ³	3
		16
<u>Third Semester</u>		
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MARS-2280	Short Films: Exploring Genre and Technique	3
MARS-2380	Visual Effects	3
MARS-2620	Applied Integrated Media (AIM) I: Real World Pre-production ¹ ... OR	3
MARS-2xxx	Media Arts and Studies Elective	3
MARS-2xxx	Media Arts and Studies Elective ... OR	3
THEA-1430	Introduction to Scenery and Stagecrafts ... OR	3
ART-1080	Visual Design I	-
		15
<u>Fourth Semester</u>		
BADM-1300	Small Business Management	4
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 	2
MARS-2xxx	Media Arts and Studies Elective	3
Soc and Beh Sci	(See AAB/AAS degree requirements)	3
		15
<u>Summer Session</u>		
MARS-2940	MARS Field Experience	1
		1
	PROGRAM TOTAL	65

ELECTIVES

		<u>Credits</u>
<u>DEGR xxxx</u>		
In the 3rd and 4th semester, students choose a three-credit course from the following courses as an elective.		
MARS-2120	Advanced Editing	3
MARS-2220	Advanced Crew and Set Operations for Motion Media	3
MARS-2680	Digital Cinematography II	3
MARS-2780	Motion Graphics II	3

¹May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.

³MATH 1530 is recommended for those who are planning to transfer to a four-year institution.

¹Students may choose to take an upper-level elective in MARS instead of taking MARS 2620. They may then join MARS 2720 as a team member or lead and work on one of the projects that were developed in MARS 2620. Students wishing to produce or direct their own projects in MARS 2720 must take MARS 2620 or have department approval.

²Course may be repeated once for up to six credits.

 = Capstone course.

MEDIA ARTS AND FILMMAKING
(Motion Graphics)

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 image to communicate a message and enhance production value for digital film and motion media productions.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

MEDIA ARTS AND FILMMAKING (Motion Graphics) (Continued)

Suggested Semester Sequence		
<u>First Semester</u>		<u>Credits</u>
ART-1080	Visual Design I ¹	3
MARS-1180	Introduction to Media Arts and Filmmaking	3
VCPH-1450	Digital Imaging I ²	<u>3</u>
		9
<u>Second Semester</u>		<u>Credits</u>
MARS-2380	Visual Effects	3
MARS-2480	Motion Graphics	<u>3</u>
		6
<u>Third Semester</u>		<u>Credits</u>
MARS-2780	Motion Graphics II	<u>3</u>
		3
PROGRAM TOTAL		18

¹May be waived for students who can demonstrate proficiency in graphic design. Portfolio review and interview with Media Arts faculty required.

²May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.

MEDIA ARTS AND FILMMAKING (Digital Video Editing)

Short-Term Certificate

These courses are selected from the Media Arts and Filmmaking degree sequence to provide a streamlined path to proficiency in video editing, basic motion graphics and digital storytelling.

The recipient of this certificate has demonstrated professional-level competency in digital, non-linear, video editing.

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>
MARS-1180	Introduction to Media Arts and Filmmaking	3
VCPH-1450	Digital Imaging I	<u>3</u>
		6
<u>Second Semester</u>		<u>Credits</u>
MARS-2110	Editing	3
MARS-2480	Motion Graphics	<u>3</u>
		6
<u>Summer Session</u>		<u>Credits</u>
MARS-2120	Advanced Editing	3
MARS-2380	Visual Effects ...OR	3
MARS-2720	Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media ¹ ...OR	
MARS-2780	Motion Graphics II	<u>-</u>
		6
PROGRAM TOTAL		18

¹Departmental approval is required for this project-based course. Certificate students taking MARS-2720 would work as a project lead in editorial.

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-1000 or higher, with a grade of "C" or higher.
- GPA required: 2.00 overall

Other Information:

- 15 students per semester per campus accepted per year
- Criminal background check required (see page 73).
- One year 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
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.
9. Effectively utilize an EMR program for documentation and insurance purposes.
10. Identify medical law and regulatory guidelines as it pertains to the ambulatory setting.

Suggested Semester Sequence		<u>Credits</u>
<u>Summer Session</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MA-1010	Introduction to Medical Terminology	2
MATH-1100	Mathematical Explorations or higher	<u>3</u>
		8
<u>First Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory ¹	1
MA-1321	Medical Office Laboratory Procedures	2
MA-132L	Medical Office Laboratory Procedures	1
MA-1402	Basic Clinical Medical Assisting	2
MA-140L	Basic Clinical Medical Assisting Lab.	1
MA-1503	Administrative Procedures for the Medical Office	2
MA-150L	Administrative Procedures Laboratory	<u>1</u>
		13
<u>Second Semester</u>		<u>Credits</u>
DIET-1200	Basic Nutrition	3
EMT-1310	Cardiopulmonary Resuscitation	1
MA-2110	Reimbursement for Physician Services	2
MA-2413	Advanced Clinical Medical Assisting	3
MA-241L	Advanced Clinical Assisting Lab	1
MA-2860	Medical Assisting Practicum C	2
MA-2980	Medical Assisting Seminar	<u>1</u>
		13
<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
HIM-1112	Physician Office Coding	4
HTEC-1120	Critical Thinking in Healthcare	1
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	-
		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
SPCH-1000	Fundamentals of Interpersonal Communication <u>3</u>	<u>3</u>
		14
PROGRAM TOTAL		62

¹BIO-2331 and BIO-2341 together will be accepted in place of BIO-1050 and BIO-105L.

C = Capstone course.

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. The five-year weighted average for Retention/Graduation of the Certificate of Proficiency in the Medical Assisting Program at Cuyahoga Community College, Cleveland, OH is 95%, based on the most recent Annual Report Form submitted to the Medical Assisting Education Review Board (MAERB) and the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Degree: Graduates may transfer directly into the Medical Assisting Degree program.

Cuyahoga Community College Medical Assisting Certificate of Proficiency is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon recommendation of the Medical Assisting Education Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs
25400 U.S. Highway 19 North, Suite 158. Clearwater, FL 33763
727-210-2350
www.caahep.org

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-1000 or higher with a "C" grade or higher.
- GPA required: 2.00 overall

Other Information:

- 15 students admitted per campus per semester.
- Certificate of Proficiency is first year of AAS in Medical Assisting.
- Criminal background check required (see page 73).
- 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. Log onto <http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html> for further information. 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.
- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
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>Credit Hrs</u>
<u>Summer Session</u>		
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
MA-1010	Introduction to Medical Terminology	2
MATH-1100	Mathematical Explorations or higher	3
		8
<u>First Semester</u>		<u>Credit Hrs</u>
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory	1
MA-1321	Medical Office Laboratory Procedures	2
MA-132L	Medical Office Laboratory Procedures	1
MA-1402	Basic Clinical Medical Assisting	2
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>Credit Hrs</u>
DIET-1200	Basic Nutrition	3
EMT-1310	Cardiopulmonary Resuscitation	1
MA-2110	Reimbursement for Physician Services	2
MA-2413	Advanced Clinical Medical Assisting	3
MA-241L	Advanced Clinical Assisting Lab	1
MA-2860	Medical Assisting Practicum	2
MA-2980	Medical Assisting Seminar	1
		13
PROGRAM TOTAL		34

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.
- 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
- For students with minimal computer experience, highly recommend also taking IT-1010.
- 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).
- The program begins Spring semester yearly, but is subject to change. Review the program website for comprehensive admissions information and application: <http://www.tri-c.edu/programs/healthcareers/medicallab/Pages/Default.aspx>.
- 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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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

Program	Admissions Requirements	Semester	Credits
CHEM-1020	Introduction to Organic Chemistry and Biochemistry ¹		4
ENG-1010	College Composition I ... OR		3
ENG-101H	Honors College Composition I		
MA-1020	Medical Terminology I		3
MATH-1410	Elementary Probability and Statistics I ²		3
MLT-1000	Introduction to Medical Laboratory Technology ³		16

First Semester	Credits	
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-1000	Critical Thinking	3
		15

Second Semester	Credits	
BIO-2500	Microbiology	4
MLT-2471	Immunohematology and Serology	5
MLT-2501	Clinical Chemistry	5
		14

Third Semester	Credits	
BIO-2341	Anatomy and Physiology II	4
MLT-2482	Clinical Microbiology	5
MLT-2990	Advanced MLT Applications C	6
		15

Fourth Semester	Credits	
MLT-2940	Medical Laboratory Field Experience C	3
MLT-2980	Professional Development and Life Skills Seminar	1
		4
	PROGRAM TOTAL	64

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-0965 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 of Applied Science degree 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-0965 or 1000-level mathematics.
- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

- 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.
- Perform proper infection control techniques and safety measures to protect patient, co-workers and community.
- 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.
- Demonstrate proper techniques using appropriate equipment to perform venipuncture and capillary puncture while maintaining quality assurance during and after specimen acquisition.
- Meet eligibility requirements to sit for American Society for Clinical Pathology (ASCP) Board of Registry Examination or equivalent.

Suggested Semester Sequence		Credits
First Semester		
BIO-1050	Human Biology ¹	3
IT-1010	Introduction to Microcomputer Applications ...OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MA-1020	Medical Terminology I	3
PHIL-2050	Bioethics ...OR	3
PHIL-205H	Honors Bioethics	–
		12
Second Semester		
MLT-1300	Introduction to Blood Collection ²	3
MLT-1850	Medical Laboratory Practicum I ²	3
MLT-2970	Advanced Phlebotomy ³	$\frac{1}{7}$
	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
- Completion of ENG-1010 College Composition I or ENG-101H with "C" or higher
- Completion of MATH-1530 College Algebra with "C" or higher
- MA-1020 with "C" or higher
- CHEM-1300/130L (Note: students with high school or previous chemistry coursework should take 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 (will only be offered in the Fall Semester)***or PHYS-1210 may be used in place of PHYS-1050 and for those students intending to transfer to a four year institution.
- 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.

Other Information:

- A 2.50 prerequisite GPA must be maintained while waiting for entry into the first program major course.
- Prior to formal admission into the program, an applicant must show evidence of completion of two 4 hour clinical observations. Details of observation requirements can be found at <http://www.tri-c.edu/programs/health-careers/nuclear-medicine/documents/observation-form.pdf>. Once completed, a copy of the observation form should be emailed to the Nuclear Medicine Program Manager, rebecca.greenfield@tri-c.edu.
- Approximately 15-18 students admitted - varies depending on space available at clinical facilities.
- Students must earn a "C" or higher in all Nuclear Medicine courses to be awarded the AAS degree in Nuclear Medicine Technology.
- Evidence of current certification in the Basic Life Support (CPR) course for Health Care Providers (adult, child, and infant) according to the American Heart Association

standards will be required prior to receiving clinical assignment the second year of the program.

- Candidates will be required to present evidence of good health verified by a physical examination prior to entering clinical training the second year of the program. 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 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, and 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/>
- 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. Log onto <http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html> for further information. Reports from the background checks will be sent to the Program Manager. Please be assured that this information will be kept confidential.
- After Program Acceptance: Students should wait until the start of fall program sequence courses to complete HAZMAT, CPR, immunizations and physical exams.
- BIO-1221 A & P for Diagnostic Medical Imaging with "C" or higher or BIO-2331 and 2341 (A&P I & II) with "C" or higher may be used in place of BIO-1221.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

NUCLEAR MEDICINE (Continued)

Suggested Semester Sequence

<u>Program Admissions Requirements</u>		<u>Credits</u>
BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging ¹	4
CHEM-1300	General Chemistry I ... AND	4
CHEM-130L	General Chemistry Laboratory I ...OR	1
CHEM-130H	Honors General Chemistry I	5
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
MATH-1530	College Algebra ² ... OR	4
MATH-153H	Honors College Algebra	4
PHYS-1050	Everyday Physics ³	<u>2</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

<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	<u>1</u>
		16

<u>Summer Session</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)		<u>2</u>
		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 a 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.

Transition to New Math Curriculum

In order to provide students enrolled prior to Fall 2016 with an appropriate transition period for to the state-mandated changes in the College's mathematics curriculum, the following "grandfathering" time periods have been established:

- **For Nursing Program Graduation:** MATH- 1200 & 1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will meet the College's Math Requirement for graduation through Summer 2021.
- **For Admission to Nursing Programs:** For students admitted to begin this programs prior to Fall 2019, MATH- 1200 or 1280 completed prior to Fall 2016 and MATH-1270 completed prior to Summer 2017 will be accepted to meet the Math requirements for admission to these programs.

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

Curriculum changes go into effect for students entering Nursing program Fall 2016. Students admitted prior to Fall 2016 will continue to follow catalog under which they were admitted.

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.
- A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from courses in English, Math, or the Sciences that are at the 1000 level or above.
- Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Associate Nursing Program with transfer credit for support course from another accredited institution** may use that institution's cumulative GPA if they have 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and a GPA of 3.0 or greater. (**Schools accepted by Tri-C)
- For the student that has a degree from another institution, the degree GPA will take precedent over the Tri-C GPA, if that GPA is higher than the Tri-C GPA.
- An official transcript must be submitted to Tri-C's Enrollment Office (Metropolitan, Eastern, or Westshore Campus).
- 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-1240 or higher with "C" or higher**. MATH-1270 or higher will be accepted as a substitute for MATH-1240 for students who completed their math prerequisite prior to fall 2016.
- Science course(s) completed over 7 years prior to the date of application to the Nursing Program cannot be used to meet Admission Requirements. These courses must be repeated.
- Complete the following ("C" grade or higher in each):
BIO-1100 or CHEM-1010 and 1020
PSY-1010 or PSY-101H

Other Information:

- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 3.0 GPA. Achieve a grade of **80% or higher** in Math Skills, **80% or higher in Biology**, and **80% 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. One attempt can be made per month. If a 2nd attempt is needed only the section(s) below 80% needs to be completed. There is a limit of 2 attempts per calendar year.

- Only one of the required science courses may be repeated once to improve a grade of less than "C". A grade of less than "C" received over 7 years ago will not count toward the "one science course" repeat rule.
- 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.
- Background check and fingerprinting required. Log onto www.tri-c.edu/nursing for further information. (See page 203.)
- Day and evening classes admitted Fall and Spring. Space available basis.


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.

Program Admissions	Requirements Semester	Suggested Semester Sequence	Credits
BIO-1100	Introduction to Biological Chemistry ¹		3
ENG-1010	College Composition I ² ... OR		3
ENG-101H	Honors College Composition I		
MATH-1240	Contemporary Mathematics or higher ³		3
PSY-1010	General Psychology ... OR		3
PSY-101H	Honors General Psychology		-

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NURSING (Continued)

<u>First Semester</u>		<u>Credits</u>
BIO-2331	Anatomy and Physiology I ⁴	4
NURS-1300	Health Assessment	2
NURS-1451	Self-Care Needs: Adult Life Span	7
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	-
		17
<u>Second Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II ⁵	4
BIO-2500	Microbiology	4
NURS-1601	Health Deviations I	7
NURS-1701	Community/Home Nursing	1
		16
<u>Third Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
NURS-2301	Specialized Health Care Needs	8
		11
<u>Fourth Semester</u>		<u>Credits</u>
NURS-2501	Health Deviations II 	8
		8
PROGRAM TOTAL		64

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. MATH-1270 or higher taken prior to Summer 2017 will be accepted to meet this requirement.

⁴Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331.

⁵Modular courses BIO-234A & BIO-234B may be taken in place of BIO-2341.

Curriculum changes go into effect with students admitted to the program Fall 2016. Students admitted to the program prior to Fall 2016 will continue to follow the catalog from the year they were admitted.

 = 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).

Transfer credits may be used to meet program admission requirements as appropriate. Curriculum changes go into effect with students admitted to the program Fall 2016. Students admitted to the program prior to Fall 2016 will continue to follow the catalog from the year they were admitted.

Curriculum changes go into effect for students entering Nursing program Fall 2016. Students admitted prior to Fall 2016 will continue to follow catalog under which they were admitted.

Program Admission Requirements:

- Bachelor's Degree or higher.
- 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 the Tri-C, Office of the Registrar, P.O. Box 5966, Cleveland, Ohio 44101.
- Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Associate Nursing Program with transfer credit for support course from another accredited institution** may use that institution's cumulative GPA if they have 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and a GPA of 3.0 or greater. (**Schools accepted by Cuyahoga Community College)
- For the student that has a degree from another institution, the degree GPA will take precedent over the Tri-C GPA, if that GPA is higher than the Tri-C GPA.
- An official transcript must be submitted to Tri-C's Enrollment Office (Metropolitan, Eastern, or Westshore Campus).
- 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-1240 Contemporary Math or higher with "C" or higher. MATH-1270 or higher will be accepted as a substitute for MATH-1240 for students who completed their math prerequisite prior to Summer 2017.
- Science course(s) completed over 7 years prior to the date of application to the Nursing Program cannot be used to meet Admission Requirements.
- Accelerated Track admitted Fall, day section only. Space available basis.
- A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from courses in English, Math, or the Sciences that are at the 1000 level or above.

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Program Sequences

NURSING (ACCELERATED TRACK) (Continued)

- Complete the following: ("C" grade or higher in each):
 - BIO-1100 Introduction to Biological Chemistry or CHEM-1010 Introduction to Inorganic Chemistry and CHEM 1020 Introduction to Organic and Biochemistry
 - BIO-2331 Anatomy and Physiology I
 - BIO-2341 Anatomy and Physiology II
 - BIO-2500 Microbiology
 - PSY-1010 General Psychology or PSY-101H
- Successful completion of Entrance Examination.

Other Information:

- Official transcript(s) should be received in the Registrar's Office at least six to eight weeks prior to contacting the Nursing department.
- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 3.0 GPA. Achieve a grade of 80% or higher in Math Skills, 80% or higher in Biology, and 80% 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. One attempt can be made per month. If a 2nd attempt is needed only the section(s) below 80% needs to be completed. There is a limit of 2 attempts per calendar year.
- Once beginning the nursing course sequence, all nursing courses must be completed in 2.5 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.
- 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. Log onto www.tri-c.edu/nursing for further information. (See page 203).

Suggested Semester Sequence

Program Admissions Requirements	Semester	Credits
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 ¹	4
BIO-2500	Microbiology	4
ENG-1010	College Composition I ³ ... OR	3
ENG-101H	Honors College Composition I	
MATH-1240	Contemporary Mathematics or higher ⁴	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	-
		24 - 29

First Semester	Credits	
NURS-1300	Health Assessment	2
NURS-1451	Self-Care Needs: Adult Life Span	7
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	-
		13

Second Semester	Credits	
NURS-1601	Health Deviations I	7
NURS-1701	Community/Home Nursing	1 8

Summer Session	Credits	
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
NURS-2301	Specialized Health Care Needs	8 11

Third Semester	Credits	
NURS-2501	Health Deviations II C	8 8

PROGRAM TOTAL 64 - 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.

¹BIO-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. MATH-1270 or higher taken prior to Summer 2017 will be accepted to meet this requirement.

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

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.

Curriculum changes go into effect for students entering Nursing program Fall 2016. Students admitted prior to Fall 2016 will continue to follow catalog under which they were admitted.

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 NURS-160D:
 1. Licensed in Ohio without restriction
 2. Graduated from an approved Practical Nursing Education Program
 3. Achieved a grade of “C” or higher in each Practical Nursing course completed.
 4. Credentialed to administer medication by the Ohio Board of Nursing (OBN)
 5. Official LPN transcript
 6. One year - minimum of clinical nursing experience as an L.P.N.
 - Complete the program admissions courses (listed below) 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: A Tri-C grade point average (GPA) of 3.0 or higher with 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above.
 - Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Associate Nursing Program with transfer credit for support course from another accredited institution** may use that institution’s cumulative GPA if they have 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and have a GPA of 3.0 or greater. For the student that has a degree from another institution, the degree GPA will take precedent over the Tri-C GPA, if that GPA is higher than the Tri-C GPA. (**Schools accepted by Cuyahoga Community College)
 - An official transcript must be submitted to Tri-C’s Enrollment Office (Metropolitan, Eastern, or Westshore Campus).
- Other Information:**
- 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.

- Science course(s) completed over 7 years prior to the date of application to the Nursing Program cannot be used to meet Admission Requirements.
- Number accepted per year: Space available basis. Modified evening classes admitted Spring.
- Work experience/volunteer: one year minimum of clinical nursing experience as an L.P.N.
- BIO-1100 Introduction to Biological Chemistry, or CHEM-1010 and CHEM-1020 with a grade of “C” or higher in each.
- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 3.0 GPA. Achieve a grade of 80% or higher in Math Skills, 80% or higher in Biology, and 80% 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. One attempt can be made per month. If a 2nd attempt is needed only the section(s) below 80% needs to be completed. There is a limit of 2 attempts per calendar year.
- 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. Log onto www.tri-c.edu/nursing for further information. (See page 203)
- 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.


Suggested Semester Sequence

<u>Program Admissions</u>	<u>Requirements</u>	<u>Semester</u>	<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹		3
ENG-1010	College Composition I ² ... OR		3
ENG-101H	Honors College Composition I		3
MATH-1240	Contemporary Mathematics or higher ³		3
PSY-1010	General Psychology ... OR		3
PSY-101H	Honors General Psychology		–
			12
<u>First Semester</u>			<u>Credits</u>
BIO-2331	Anatomy and Physiology I ⁴		4
NURS-160A	Access to Registered Nursing * ⁵		3
NURS-160D	Health Deviations I for LPNs ** ⁶		3
PSY-2020	Life Span Development ... OR		4
PSY-202H	Honors Life Span Development		<u>4</u>
			14
<u>Summer Session</u>			<u>Credits</u>
BIO-2341	Anatomy and Physiology II		4
BIO-2500	Microbiology		<u>4</u>
			8
<u>Second Semester</u>			<u>Credits</u>
ENG-1020	College Composition II ... OR		3
ENG-102H	Honors College Composition II		
NURS-1701	Community/Home Nursing		1
NURS-2301	Specialized Health Care Needs		<u>8</u>
			12

(continued on next page)

Program Sequences

NURSING (ACCESS LPN TO RN TRACK) (Continued)

<u>Third Semester</u>		<u>Credits</u>
NURS-2501	Health Deviations II 	<u>8</u> 8
PROGRAM TOTAL		54

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. MATH-1270 or higher taken prior to Summer 2017 will be accepted 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, 1451, and 1601.*

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-Pass credit for NURS-1300, 1451 & 1601 (16 Cr) or if eligible apply for transfer of credit for NURS 1300, 1451 & 1601 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.

⁸LPN's accepted into Cuyahoga Community College Nursing Program are required to take NURS-160D prior to progressing to NURS-2301. 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.

Curriculum changes go into effect with students admitted to the program Fall 2016. Students admitted to the program prior to Fall 2016 will continue to follow the catalog from the year they were admitted.

 = 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 (at the direction of a licensed physician, dentist, podiatrist, optometrist, chiropractor, 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 credit hours, divided among nursing and non-nursing courses. The nursing courses consist of classroom activities, clinical labs, hospital and long-term care facilities 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:

- Applications may be requested after meeting requirements listed below <http://www.tri-c.edu/programs/nursing/Pages/default.aspx>
- High School Diploma/GED, or a higher degree transcript must be on file in the Office of the Registrar.
- Eligibility for ENG-1010
- Eligibility for MATH-1240
- Cumulative college grade point average (GPA) of 2.5.
- Students enrolled at Cuyahoga Community College (Tri-C) who do not possess a Tri-C GPA and are seeking to enter the Practical Nursing Program with transfer credit for support course from another accredited institution** may use that institution's cumulative GPA if they have 9 credit hours from courses in English, Math or the Sciences that are at the 1000 level or above (no developmental courses), and a GPA of 2.5 or greater. (**Schools accepted by Cuyahoga Community College)
- For the student that has a degree from another institution, the degree GPA will take precedent over the Tri-C GPA, if that GPA is higher than the Tri-C GPA.
- An official transcript must be submitted to Tri-C's Enrollment Office (Metropolitan, Eastern, Westshore, or Western Campus).

Other Information:

- Day and modified evening classes admitted Fall only. Space available basis. Clinical experiences may be held during the day and/or evenings.
- BIO-1050 and BIO-105L may be repeated once to improve a grade of "C" or less. A grade of less than "C" received over 7 years ago will not count toward the "one science course" repeat rule.
- The Elsevier Admission Test (A2) is required for admission into the Practical Nursing program. In order to take the A2 test, the student must possess a High School diploma or GED, overall college GPA of 2.5, and eligible to register for Math 1141 and English 1010. Applicants must 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. One attempt can be made per month. If a 2nd attempt is needed only the section(s) below 75% needs to be completed. There is a limit of 2 attempts per calendar year.

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PRACTICAL NURSING (Continued)

- A grade of "C" or higher is required for core courses: ENG-1010, BIO-1050/105L, PSY-1010 and PSY-2020.
- 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.
- Graduates of this certificate program may be eligible for the LPN to RN Track of the ADN Program.
- 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. Log onto <http://www.tri-c.edu/programs/health-careers/background-check-information-bci.html> for further information.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

<u>First Semester</u>		<u>Credits</u>
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory	1
PNUR-1200	Physical Assessment for the Practical Nurse	2
PNUR-1210	Fundamentals of Practical Nursing	3
PNUR-1322	Nursing Management of the Adult I	3
		<hr/> 12
<u>Second Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
PNUR-1330	Nursing Management of Adults II	8
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
		<hr/> 14
<u>Summer Session</u>		<u>Credits</u>
PNUR-1341	Lifespan Nursing for the Practical Nurse	4
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	
		<hr/> 8
PROGRAM TOTAL		<hr/> 34

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.

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 work-related and daily activities, from dressing and feeding themselves, to work, school, play, leisure, and/or social participation.

This program prepares students to provide occupational therapy treatments and related tasks under the supervision of a Registered Occupational Therapist in a variety of settings, including, but not limited to: acute care, long term care, and rehabilitation facilities, school system, 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 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 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.

- Time limit on core courses is ten years.
- 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.
- Applicants whose native language is not English must take the TOEFL (Test of English as a Foreign Language) Exam. Arrangements and costs incurred for the TOEFL will be the responsibility of the student. *Minimum scores must reflect 21 in Reading, 21 in Listening, 23 in Writing and 25 in Speaking.*
- Criminal background check required (see page 73).


Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.


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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
PSY-1010	General Psychology ² ...OR	3
PSY-101H	Honors General Psychology	
PTAT-1300	Functional Anatomy	<u>4</u>
		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	<u>2</u>
		13
<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 	3
OTAT-2860	Practicum III	<u>2</u>
		13
<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	63

¹BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

 = Capstone course.

The OTAT program is fully accredited by The Accreditation Council for Occupational Therapy Education (ACOTE) of The American Occupational Therapy Association (AOTA) located at: ACOTE, c/o Accreditation Department, 4720 Montgomery Lane, Suite 200, Bethesda, MD, 20824-3449. Telephone: 301-652-2682 (Website: www.acoteonline.com).

**OPERATIONS ENGINEERING
TECHNOLOGY**

**Associate of Applied Science in Operations Engineering
Technology**

The Associate of Applied Science degree in Operations Engineering Technology is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/ production setting. Production, logistics, basic design principles, and basic business practices are covered within the program. The program is designed to tie the fundamentals of engineering technology with the fundamentals of production management. This program ties into 4-year bachelor degree programs aimed at production management.

PENDING OHIO DEPARTMENT OF HIGHER EDUCATION APPROVAL. PROGRAM EXPECTED TO BEGIN IN SPRING 2017.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Utilize basic computer skills including word processing, spreadsheet, and database. (i.e. MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Read engineering drawings, with an understanding of Geometric Dimensioning & Tolerancing, and be able to measure parts against engineering drawings to determine conformity.
7. Utilize inventory management skills including: GIS concepts (minimizing routes); basic use of an inventory management software systems; material flow, and cycle count concepts.
8. Utilize a working understanding of statistical process controls (SPC) and pre-production approval process (PPAP) to validate both product and process compliance.

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Program Sequences

OPERATIONS ENGINEERING TECHNOLOGY (Continued)

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1530	College Algebra ¹	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	–
		17
<u>Second Semester</u>		
CNST-1740	Fundamentals of Geographic Information Science	3
MATH-1540	Trigonometry	3
MET-1630	Industrial Supply Logistics	3
MET-2041	CAD II & GD&T	3
MET-2601	3D Solid Modeling	3
		15
<u>Third Semester</u>		
BADM-1020	Introduction to Business	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-2400	Statistical Quality Control ³	3
PHYS-1210	College Physics I ²	4
		13
<u>Fourth Semester</u>		
BADM-2150	Business Law	4
CHEM-1300	General Chemistry I ... AND	4
CHEM-130L	General Chemistry Laboratory I ... OR	1
CHEM-130H	Honors General Chemistry I	5
ENG-2151	Technical Writing ⁵	3
MET-2750	Technical Operations Management C	3
		15
	PROGRAM TOTAL	60

¹MATH-1610 can be used for both MATH-1530 and MATH-1540 requirements but an additional 2 credit hours of electives may be needed.

²PHYS-2310 may be used to meet this requirement.

³MET-2430 may be used to meet this requirement.

⁵SPCH-1010 or ENG-1020 may be used to meet this requirement.

C = Capstone course.

OPERATIONS ENGINEERING TECHNOLOGY (AUTOMATED MANUFACTURING)

Associate of Applied Science in Operations Engineering Technology with a concentration in Automated Manufacturing

The Associate of Applied Science degree in Operations Engineering Technology with a concentration in Automated Manufacturing is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/production setting that uses automated manufacturing processes. Production, logistics, basic design principles, automated manufacturing processes, and the basics in managing manufacturing processes is covered within the program. The program is designed to tie the fundamentals of automated manufacturing with the fundamentals of managing production processes. This program ties into 4-year bachelor degree programs aimed at automated manufacturing.

PENDING OHIO DEPARTMENT OF HIGHER EDUCATION APPROVAL. PROGRAM EXPECTED TO BEGIN IN SPRING 2017.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Utilize basic computer skills including word processing, spreadsheet, and database, (i.e., MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Utilize a working understanding of statistical process controls (SPC) and pre-production approval process (PPAP) to validate both product and process compliance.
7. Explain and apply Computer Numerical Control (CNC) and Program Logic Controller (PLC) programming concepts.
8. Understand and follow preventative maintenance strategy.

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OPERATIONS ENGINEERING TECHNOLOGY
(AUTOMATED ENGINEERING) (Continued)

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I	3
MATH-1530	College Algebra ¹	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming ²	2
MET-1230	Drawing & AutoCAD	3
PSY-1010	General Psychology	<u>3</u>
		17
<u>Second Semester</u>		<u>Credits</u>
CNST-1740	Fundamentals of Geographic Information Science	3
MATH-1540	Trigonometry	3
MET-1630	Industrial Supply Logistics	3
MET-2041	CAD II & GD&I	3
MET-2601	3D Solid Modeling	<u>3</u>
		15
<u>Third Semester</u>		<u>Credits</u>
EHST-1310	Introduction to Environmental Law	4
MET-1240	Machine Tools and Manufacturing Processes	3
MET-2400	Statistical Quality Control	3
PHYS-1210	College Physics I	<u>4</u>
		14
<u>Fourth Semester</u>		<u>Credits</u>
EHST-1330	Hazardous Waste Operations and Emergency Response ⁴	2
ENG-2151	Technical Writing ³	3
MET-1400	CNC Programming and Operation	3
MET-2140	Manufacturing Automation and Control	3
MET-2500	Fundamentals of Products Development and Manufacture C	-
		14
	PROGRAM TOTAL	60

¹MATH-1610 can be used for both MATH-1530 and MATH-1540 requirements but an additional 2 credit hours of electives may be needed.

²IT-2670 or MET-2550 will be accepted in place of MET-1120 to meet this requirement.

³SPCH-1010 or ENG-1020 may be used to meet this requirement.

⁴EHST-1350 will be accepted in place of EHST-1330 to meet this requirement.

C = Capstone course.

**OPERATIONS ENGINEERING
TECHNOLOGY (ENGINEERING
MANAGEMENT)**

**Associate of Applied Science in Operations Engineering
Technology (Engineering Management)**

The Associate of Applied Science degree in Operations Engineering Technology with a concentration in Engineering Management is designed to enable students to obtain the necessary background to become an effective supervisor or manager in a manufacturing/ production setting on the engineering design side. Production, logistics, and the basics in engineering design is covered within the program. The program is designed to tie the fundamentals of manufacturing with the fundamentals of engineering management. This program ties into 4-year bachelor degree programs aimed at industrial/ manufacturing engineering.

PENDING OHIO DEPARTMENT OF HIGHER EDUCATION APPROVAL. PROGRAM EXPECTED TO BEGIN IN SPRING 2017.

Program Admission Requirements:

- Eligibility for ENG-1010 College Composition I
- MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test to enroll in MATH-1530.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Utilize basic computer skills including word processing, spreadsheet, and database. (i.e. MS Word, Excel, Access, PowerPoint)
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Apply knowledge of regulated environments, various industry standards including FDA, ISO, and documentation and report writing.
4. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
5. Apply knowledge of basic lean concepts and tools (5 S), including introductory Six Sigma concepts, methods for identifying and eliminating the various forms of waste.
6. Read engineering drawings, with an understanding of Geometric Dimensioning & Tolerancing, and be able to measure parts against engineering drawings to determine conformity.
7. Create and execute a program management plan (Gantt Charts, etc.).
8. Interpret operations metrics (on-time delivery, defects parts per million, labor efficiency, equipment capacity utilization, material yield) in order to drive improvement.

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Program Sequences

OPERATIONS ENGINEERING TECHNOLOGY (ENGINEERING MANAGEMENT) (Continued)

9. Interpret calculation of cost of goods sold (overhead, direct/indirect labor, etc.).
10. Apply concepts of workplace ergonomics to determine proper and safe operations.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1530	College Algebra ¹	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming ²	2
MET-1230	Drawing & AutoCAD	3
PSY-1010	General Psychology	<u>3</u>
		17

Suggested Semester Sequence		<u>Credits</u>
<u>Second Semester</u>		
CNST-1740	Fundamentals of Geographic Information Science	3
MATH-1540	Trigonometry	3
MET-1630	Industrial Supply Logistics	3
MET-2041	CAD II & GD&T	3
MET-2601	3D Solid Modeling	<u>3</u>
		15

Suggested Semester Sequence		<u>Credits</u>
<u>Summer Session</u>		
MATH-1610	Calculus I	<u>5</u>
		5

Suggested Semester Sequence		<u>Credits</u>
<u>Third Semester</u>		
ENG-2151	Technical Writing ²	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-2422	Fundamentals of Engineering Economics	3
MET-2430	Engineering Probability and Statistics	<u>3</u>
		12

Suggested Semester Sequence		<u>Credits</u>
<u>Fourth Semester</u>		
CNST-2510	Introduction to Asset Management C	3
MET-2610	Statics	3
PHYS-2310	General Physics I	<u>5</u>
		11
	PROGRAM TOTAL	60

¹MATH 1620 or MATH 1580 can be used for both MATH 1530 and MATH 1540 requirements but an additional 2 credit hours of electives may be needed.

²IT-2670 or MET-2550 will be accepted in place of MET-1120 to meet this requirement.

C = Capstone course.

INDUSTRIAL MANAGEMENT TECHNOLOGY

Certificate of Proficiency

The certificate in Industrial Management Technology is designed for students seeking an entry level position in the area of logistics and manufacturing operations. Students are introduced to technology related operations, engineering drawings, and industrial logistics of manufacturing. Application of math, communication, and science principles. Degree: Students may apply credits towards the Associate of Applied Science degree in Operations Engineering Technology.

PENDING OHIO DEPARTMENT OF HIGHER EDUCATION APPROVAL. PROGRAM EXPECTED TO BEGIN IN SPRING 2017.

Financial Assistance funds cannot be applied towards this program. Request for eligibility to utilize Financial Assistance funds for this program is currently pending.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Utilize inventory management skills including: GIS concepts (minimizing routes); basic use of an inventory management software systems; material flow, and cycle count concepts.
2. Identify and explain basic safety requirements and good safe work habits for working in manufacturing industries.
3. Communicate effectively, orally and in writing, and display professionalism, and work well in a team environment.
4. Utilize basic computer skills including word processing, spreadsheet, and database. (i.e. Excel, Access)
5. Utilize inventory management skills including: GIS concepts (minimizing routes); basic use of an inventory management software systems; material flow, and cycle count concepts.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I	3
MATH-1530	College Algebra	4
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	3
PSY-1010	General Psychology	<u>3</u>
		17

Suggested Semester Sequence		<u>Credits</u>
<u>Second Semester</u>		
CNST-1740	Fundamentals of Geographic Information Science	3
MATH-1540	Trigonometry	3
MET-1630	Industrial Supply Logistics	3
MET-2041	CAD II & GD&T	3
MET-2601	3D Solid Modeling	<u>3</u>
		15
	PROGRAM TOTAL	32

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-1000 level 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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. Demonstrate an understanding of the ophthalmic profession and optical manufacturing process.
7. Work within the safety standards that govern opticianry.
8. Discuss Ohio and national statutes that govern opticianry.
9. Conduct him/herself in a professional manner at all times.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-1230	Anatomy and Physiology of the Eye	4
MATH-1xxx	1000-level MATH course 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>		<u>Credits</u>
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
		14

<u>Summer Session</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
		9

<u>Third Semester</u>		<u>Credits</u>
OPT-1710	Introduction to Patient Care	3
OPT-2501	Optical Business	3
OPT-2550	Advanced Optical Dispensing Lab	1
OPT-2650	License Review Spectacle	1
OPT-2940	Optical Field Experience I	2
OPT-2971	Optical Field Experience Seminar I	3
		13

<u>Fourth Semester</u>		<u>Credits</u>
OPT-2660	License Review Contact Lens	1
OPT-2701	Refractometry	3
OPT-2950	Optical Field Experience II	2
OPT-2981	Optical Field Experience Seminar II C	3
	Communication...(Select from American Sign Language, English, Foreign Language, or Speech Communication) ¹	3
		-
		12

PROGRAM TOTAL 64

¹Highly 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

Other Information:

- 25 students accepted per year

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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-1xxx	1000-level MATH course 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
PHYS-1300	Physics of Optical Materials	4
		17
	PROGRAM TOTAL	32

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.

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).
- Molly Drenen, program manager, may be reached at 216-987-4454.

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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. 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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
BIO-1230	Anatomy and Physiology of the Eye	4
OPT-1710	Introduction to Patient Care	3
		7
<u>Second Semester</u>		<u>Credits</u>
OPT-1720	Advanced Patient Care	3
OPT-1911	Ophthalmic Assisting Directed Practice	4
OPT-2701	Refractometry	3
		10
	PROGRAM TOTAL	17

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-1001 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, P O Box 5966, Cleveland, OH 44101.

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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ACCT-1020	Applied Accounting ¹	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	3
PL-1001	Introduction to Paralegal Profession	3
POL-1010	American National Government ... OR	3
POL-101H	Honors American National Government	-
		15

<u>Second Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
MATH-1100	Mathematical Explorations or higher	3
PHIL-1020	Introduction to Logic	3
PL-1300	Civil Procedure	3
PL-1400	Basic Legal Research and Writing	3
PL-1502	Law Office Technology	<u>3</u>
		18

<u>Third Semester</u>		<u>Credits</u>
ACCT-1310	Financial Accounting ... OR	4
EHST-1310	Introduction to Environmental Law ... OR	4
MA-1020	Medical Terminology I	3
PL-2301	Torts and Evidence	4
PL-2400	Computer-Assisted Legal Research	3
PL-2440	Business Transactions	3
PL-xxxx	Any PL elective course	<u>2 - 3</u>
		15 - 17

<u>Fourth Semester</u>		<u>Credits</u>
PL-2851	Paralegal Practicum ²	1
PL-2991	Paralegal Capstone C	1
PL-xxxx	Any PL elective course	2 - 3
PL-xxxx	Any PL elective course	3
PL-2xxx	Any 2000-level PL elective course	3
POL-1020	State and Local Government ... OR	3
POL-2100	Constitutional Law	-
		13 - 14
PROGRAM TOTAL		61 - 64

¹Would like the option to be ACCT 1020 or higher.

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
- Submit college transcripts to verify associate or bachelor's degree.
- Complete the following:
 - PL-1001 with "B" or higher
 - Personal narrative
 - Assessment of college-level writing skills
 - Assessment of computer skills
- GPA required: 2.75 in Paralegal courses, 2.50 overall

Other Information:

- Fall, Spring and Summer admission

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

9. Communicate appropriately and professionally verbally and in writing to diverse audiences while maintaining confidentiality.
10. Work as an effective member of the legal team in a variety of roles.
11. Act in accordance with the rules of professional conduct and paralegal ethical codes and company policies.
12. Organize, prioritize, schedule and track assignments and appointments to meet deadlines and ensure accurate billing.
13. Investigate, prepare, conduct and summarize party, witness and expert interviews to aid in case development.
14. Analyze fact patterns; identify issues; find, apply and properly cite law using a variety of resources.
15. Draft, format and proof accurate legal documents using current technology in accordance with applicable court rules.

16. Organize, categorize and maintain case information in preparation for litigation.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
PL-1001	Introduction to Paralegal Profession ¹	3
PL-1300	Civil Procedure	3
PL-1400	Basic Legal Research and Writing	3
PL-1502	Law Office Technology ²	<u>3</u>
		12
<u>Second Semester</u>		
PL-2301	Torts and Evidence ³	4
PL-2400	Computer-Assisted Legal Research	3
PL-2440	Business Transactions	3
PL-xxxx	Any PL elective course	<u>3</u>
		13
<u>Third Semester</u>		
PL-2851	Paralegal Practicum ¹	1
PL-2991	Paralegal Capstone	1
PL-xxxx	Any PL elective course	<u>2-3</u>
		4-5
PROGRAM TOTAL		29 - 30

¹May be waived with documentation of comparable or equivalent experience.

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

(continued on next page)

PHARMACY TECHNOLOGY (Continued)

- Completion of MATH-0955 Beginning Algebra I with "C" or higher, or appropriate score on Math placement test to be eligible for enrollment into MATH-1240.
- Complete BIO-1100 with "C" or higher or complete CHEM-1010 and CHEM-1020.
- GPA required: 2.00 admissions requirements; 2.00 overall.

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. 216-987-2381
- Criminal background check required (see page 73).

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 ¹	3
BIO-105L	Human Biology Laboratory	1
MATH-1240	Contemporary Mathematics 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>
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...	(Select from American Sign Language, English, Foreign Language, or Speech Communication)	3
		15
<u>Third Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
MA-1020	Medical Terminology I	3
PHM-2701	Current Topics in Pharmacy Practice C	4
PHM-2860	Pharmacy Technology Practicum II	3
		14
<u>Fourth Semester</u>		<u>Credits</u>
HLTH-1100	Personal Health Education	3
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
PHM-2080	Pharmacy Technician Examination Review	1
PHM-2870	Pharmacy Technology Practicum III	3
		10
PROGRAM TOTAL		61

¹CHEM-1010 and CHEM-1020 together will be accepted in place of BIO-1100.

C = Capstone course.

PHARMACY TECHNICIAN

Certificate of Proficiency

A pharmacy technician assists the pharmacist 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. 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

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Program Sequences

PHARMACY TECHNICIAN (Continued)

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).
- Completion of MATH-0955 Beginning Algebra I or sufficient score on Math Placement Test to enroll in MATH-1240.
- 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.

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).
- Maryann Stuhan, Pharmacy Technology Program Manager, may be reached at 216-987-2381.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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		Credits
Summer Session		
BIO-1100	Introduction to Biological Chemistry ¹	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	–
		6

First Semester		Credits
BIO-1050	Human Biology ¹	3
BIO-105L	Human Biology Laboratory	1
MATH-1240	Contemporary Mathematics 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

Second Semester		Credits
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 and CHEM-1020 together will be accepted in place of BIO-1100.

¹BIO-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-1240 Contemporary Mathematics or higher.
- Complete the following with "C" grade or higher: BIO-2331 (or 2330), HTEC-1000, MA-1020

Other Information:

- 24 students accepted per year
- All science courses must have been completed within the past 10 years.

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PHYSICAL THERAPIST ASSISTING TECHNOLOGY (Continued)

- 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-1240, Contemporary Mathematics (or higher level). Admissions requirement courses are ENG-1010, BIO-2331, HTEC-1000, and MA-1020.
- 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/transfer-center/transfer-of-credit-to-tri-c.html> will be accepted. Overall GPA is calculated based on all previous college coursework completed through the semester prior to the date of application.
- For students applying for admission to the program for 2017 and beyond, we can choose not to consider grades from another institutions transcript that are older than 7 years and that negatively impact the overall GPA. In this case, we will not accept any coursework from that transcript, even if that coursework meets current prerequisite requirements.
- Completion of 40 hours of work, volunteering and/or observation in a Physical Therapy Department under the supervision of a Physical Therapist or Physical Therapist Assistant. These hours must be documented on our Experience Verification Form.
- Any student placed in ESL courses through the college's ESL Assessment procedure will be required to take and pass the Test of English as a Foreign Language (TOEFL) with a minimum scoring in Reading 21, Listening 18, Writing 24 and Speaking 26.
- Criminal background check required (see page 73).

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>Suggested Semester Sequence</u>		
<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	
HTEC-1000	Introduction to Patient Care	1
MA-1020	Medical Terminology I	3
		11
<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
MATH-1240	Contemporary Mathematics or higher	3
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
		17
<u>Second Semester</u>		<u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
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-2341	Psychosocial Issues in Physical Therapy	2
		16
<u>Summer Session</u>		<u>Credits</u>
PTAT-2940	Field Experience I	1
		1
<u>Third Semester</u>		<u>Credits</u>
HTEC-1120	Critical Thinking in Healthcare	1
HTEC-1610	Introduction to Pharmacology	2
PTAT-2200	Physical Therapy in Acute Care Setting	2
PTAT-2301	Long Term Physical Therapy Rehabilitation Procedures	4
PTAT-2310	Pediatric Physical Therapy	2
PTAT-2330	Geriatric Physical Therapy	2
		13
<u>Fourth Semester</u>		<u>Credits</u>
PTAT-2840	Clinical Practicum I C ¹	2
PTAT-2850	Clinical Practicum II C ¹	2
PTAT-2970	Practicum Seminar	1
		5
PROGRAM TOTAL		63

¹Consecutive 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 Master's 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).

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Apply medical knowledge about established and evolving biomedical, clinical and cognate sciences to perform patient care by the physician assistant.
2. Provide care that is compassionate, appropriate and effective for treating health problems and promoting health by the development of a diagnostic and therapeutic plan, accurate documentation of medical records and the performance of appropriate medical and surgical skills.
3. Utilize interpersonal and communication skills that facilitate effective, empathetic and caring interactions with patients, their families and other health professionals.
4. Demonstrate a commitment of professional service, adherence to ethical principles (patient privacy and confidentiality), sensitivity to the cultural diversity of patients and maintenance of personal health and well-being.
5. Investigate and evaluate patient care practices, appraisal and assimilate scientific evidence and improve their practice of medicine by practice-based learning, self-evaluation and the development of strategies for self-improvement.
6. Demonstrate an awareness of and responsiveness to the larger context and systems of health care and the ability to call on system resources such as administrative and management skills to provide care that is of optimal value.

(continued on next page)

PHYSICIAN ASSISTANT (Continued)

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
<u>Summer Session</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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
2. Provide positive motivation to crew members by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project/product.
3. Apply Green Industry Standards of quality, artisanship, and environmental responsibility to all aspects of work within the scope of the industry.
4. 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.
5. 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.

(continued on next page)

Program Sequences

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Continued)

6. 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.
7. Demonstrate effective oral and written communication skills to develop professional interpersonal relationships with suppliers, co-workers, and clients from diverse cultural backgrounds.
8. Effectively use math and the most recent technologies to create estimates for production of a product including labor and materials needed.
9. 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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
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	2
PST-xxxx	Plant Science Elective (select from below list)	2
		16

<u>Second Semester</u>		<u>Credits</u>
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
PSCI-1020	Chemistry	3
PSCI-102L	Chemistry Laboratory	1
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1420	Landscape Practices	3
PST-xxxx	Plant Science elective (select from below list)	3
		16


<u>Summer Session</u>		<u>Credits</u>
PST-2950	Field Experience	3
		3

<u>Third Semester</u>		<u>Credits</u>
HLTH-1230	Standard First Aid and Personal Safety	1
PHIL-1000	Critical Thinking	3
PST-2320	Plant Pest Diagnostics	4
PST-2370	Introduction to Turfgrass	2
PST-xxxx	Plant Science elective (select from below list)	3
		13

<u>Fourth Semester</u>		<u>Credits</u>
PST-1600	Irrigation and Drainage	2
PST-2310	Soil Technology	3
PST-2380	Arboriculture	2

PST-xxxx	Plant Science elective (select from below list)	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		13

PROGRAM TOTAL 61

 = Capstone course.

ELECTIVES

<u>Landscape Contracting Concentration</u>		<u>Credits</u>
Recommended Electives for concentration in Landscape Contracting		
PST-1441	Introduction to Landscape Design	3
PST-1450	Landscape Design - CAD	3
PST-1510	Landscape Contracting	3
PST-2431	Planting Design	3

<u>Garden Center/Nursery Management Concentration</u>		<u>Credits</u>
Recommended electives for concentration in Garden Center/Nursery Management.		
BADM-1300	Small Business Management	4
PST-1330	Plant Propagation	2
PST-1351	Plant Production	3
PST-1400	Garden Center and Nursery Management	3

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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GARDEN CENTER (Continued)

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
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.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</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>		
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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. 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.
2. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs, and appropriate placement within the landscape.
3. Demonstrate knowledge of landscape business requirements including estimating, profit and loss analysis, pricing strategies and customer relations.

Suggested Semester Sequence		<u>Credits</u>
<u>First Semester</u>		
IT-1010	Introduction to Microcomputer Applications ... OR	3
IT-101H	Honors Intro to Microcomputer Applications	3
PST-1311	Deciduous Woody Landscape Plants	3
PST-1441	Introduction to Landscape Design	3
PST-1510	Landscape Contracting	<u>3</u>
		12
<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-1450	Landscape Design - CAD	3
PST-2431	Planting Design	<u>3</u>
		10
	PROGRAM TOTAL	22

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>		<u>Credits</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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>First Semester</u>		<u>Credits</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	2
		15

<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

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:

- Applications may be submitted after meeting all requirements listed below. Contact Dave Lucas (216 987-5267) or Mike Cassida (216 987-5654) for admissions and program information.
- 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.
- Two 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 Summer Session.
- Criminal background check required (see page 73).

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Educate the patient on sleep and sleep disorders and explain the procedures and equipment that will be used during testing within scope of practice.

(continued on next page)

POLYSOMNOGRAPHY (Sleep Disorders)
(Continued)

2. 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.
3. Set-up, calibrate, monitor, and trouble shoot hardware. Run sleep software to acquire accurate and artifact free data while maintaining safety.
4. Observe patients, data, and equipment to react appropriately and safely.
5. Explain general lab management procedures.
6. Meet the educational requirements for registry eligibility for the RPSGT exam.
7. Communicate verbally with members of the healthcare team and patient's family members (or care takers when appropriate) according to established guidelines.
8. To be able to work independently as well as a member of a healthcare team; to ensure proper test and patient safety.
9. Act professionally, according to the Board Registered Polysomnographic Technical Code of Conduct and established institutional guidelines.

Suggested Semester Sequence

<u>Summer Session</u>		<u>Credits</u>
BIO-1100	Introduction to Biological Chemistry ¹	3
BIO-2331	Anatomy and Physiology I	4
END-1310	Cardiopulmonary Physiology of Sleep	3
END-1410	Beginning Polysomnography	2
MATH-1240	Contemporary Mathematics or higher ²	3
		15
<u>First Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
END-1421	Intermediate Polysomnography I	2
END-142L	Intermediate Polysomnography-I Lab	1
END-1934	Polysomnography Directed Practice-I	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	-
		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.

²MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted to meet the College's math requirement for graduation through Summer 2021.

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-1240	Contemporary Mathematics or higher ¹	3
		15

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**PURCHASING AND SUPPLY MANAGEMENT
(Continued)**

<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
DEGR-xxxx	General Elective	1 - 3
		15 - 17
<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 - 62

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

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

<u>Suggested Semester Sequence</u>		<u>Credits</u>
<u>First Semester</u>		
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-2120	Logistics Management	3
BADM-2160	Introduction to Purchasing	3
ECON-2620	Principles of Microeconomics	4
		17

<u>Second Semester</u>		<u>Credits</u>
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...OR	
BADM-xxxx	BADM Program Elective...OR	
MARK-xxxx	MARK Program Elective	3 - 4
		18 - 19
	PROGRAM TOTAL	35 - 36

<u>Electives</u>		<u>Credits</u>
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 healthcare institutions. The program admits twice yearly (fall and spring semesters) for the daytime track and once yearly (fall semester) for the evening/ weekend track. While credit hours vary each semester, the time commitment required for student success demands the equivalent of a full-time commitment. 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 admission requirements:

- High School Diploma/GED
- Complete ENG-1010 College Composition I with a "C" or higher.
- Complete MATH-1240 Contemporary Mathematic or higher with "C" or higher. MATH-1240 or higher is a program admission requirement effective fall 2016 semester. MATH-1270 or higher will be accepted as a substitute for MATH-1240 for students who completed their math prerequisite prior to the fall 2016 semester.
- Complete all Program Admission Requirement courses (listed in semester sequence) with "C" or higher.
- *BIO-2331 and BIO-2341, Anatomy and Physiology I and II, together will be accepted in place of BIO-1221.
- GPA required: 2.5 admissions requirements, 2.0 overall.
- 2.50 in program admission requirement courses/2.00 overall. These GPA's reflect minimum admission requirements; students are strongly advised to strive for higher GPA's. Students achieving better grades in admission requirement courses are better prepared academically for the rigors of the program.
- Core courses may be repeated only once to improve a grade below "C."

Other Information:

- 45-55 students accepted per year.

- 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.
- 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.
- The radiography program admits biannually (fall and spring semesters) for the daytime track and annually (fall semester) for the evening/ weekend track. Refer to the application packet on www.tri-c.edu/radiography for detailed information about the program and for daytime and evening/ weekend track schedules.
- 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.
- Mandatory Radiography Program Information Session. Students are 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.
- Courses used as prerequisites, program admission requirements, 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.
- Students who are **accepted into the program as evidenced by a formal acceptance notification from the program** in the fall 2016 semester and later will NOT be required to complete PHIL-2050 but WILL need to complete ENG-1020.
- Students accepted into the program prior to fall 2016 must complete PHIL-2050 and must select a 3 credit communications course to meet the AAS degree requirement. Students must select a course from the following areas: ENG, ASL, SPCH or foreign language. These students should meet with a counselor to confirm that their choice of course will meet the communications requirement.
- 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.

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RADIOGRAPHY (Continued)

- 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, CPR certification and health insurance 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.
- All applicants must complete DMS-1351. Direct patient care work experience and/or healthcare certification (e.g. nursing assistant, medical assistant, etc.) cannot substitute for this course. The program must document students' completion of specific patient care competencies required for credentialing and this is accomplished through DMS-1351.
- 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.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 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
MATH-1240	Contemporary Mathematics or higher ²	3
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
		17




<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 (a) ³	
RADT-191S	Clinical Radiography I (b) ¹	
RADT-191A	Clinical Radiography I (c) ... AND	
RADT-191B	Clinical Radiography I (c)	

<u>Summer Session</u>		<u>Credits</u>
ENG-1020	College Composition II ⁴ ... OR	3
ENG-102H	Honors College Composition II	
RADT-1351	Image Acquisition and Evaluation	3
RADT-1410	Intermediate Radiographic Positioning	3
RADT-2401	Imaging Systems	2
		11

<u>Third Semester</u>		<u>Credits</u>
RADT-2911	Clinical Radiography II (a)	
RADT-291S	Clinical Radiography II (b)	
RADT-291A	Clinical Radiography II (c) ... AND	
RADT-291B	Clinical Radiography II (c)	

<u>Fourth Semester</u>		<u>Credits</u>
PHYS-2250	Radiographic Physics and Quality Control	4
RADT-2350	Radiographic Pathology	3
RADT-2362	Interventional Radiography and Pharmacology	1
		8

<u>Summer 2 Session</u>		<u>Credits</u>
RADT-2921	Clinical Radiography III (a) 	
RADT-292S	Clinical Radiography III (b) 	
RADT-2921	Clinical Radiography III (c) 	

Program Subtotal 45

OPTIONS

<u>(A) Fall Start - Daytime Track</u>		<u>Credits</u>
Students beginning the program in a fall semester (daytime track) will complete the following clinical courses: RADT-1911, RADT-2911 and RADT-2921.		
RADT-1911	Clinical Radiography I	7
RADT-2911	Clinical Radiography II	7
RADT-2921	Clinical Radiography III	5

PROGRAM TOTAL - OPTION A 64

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RADIOGRAPHY (Continued)

<u>(B) Spring Start - Daytime Track</u>		<u>Credits</u>
Students beginning the program in a spring semester (daytime track) will complete the following clinical courses: RADT-191S, RADT-291S and RADT-292S		
RADT-191S	Clinical Radiography I	5
RADT-291S	Clinical Radiography II	7
RADT-292S	Clinical Radiography III	7
PROGRAM TOTAL - OPTION B		64

<u>(C) Fall Start - Evening/Weekend Track</u>		<u>Credits</u>
Students beginning the program in a fall semester (evening/weekend track) will complete the following clinical courses: RADT-1911 or RADT-191A and RADT-191B; RADT-291A and RADT-291B; and RADT-2921.		
RADT-191A	Clinical Radiography I ... AND	6
RADT-191B	Clinical Radiography I	1
RADT-291A	Clinical Radiography II ... AND	6
RADT-291B	Clinical Radiography II	1
RADT-2921	Clinical Radiography III	5
PROGRAM TOTAL - OPTION C		64


¹BIO-2331 and BIO-2341 together will be accepted in place of BIO-1221.

²MATH-1240 or higher is a program admission requirement effective fall 2016. MATH-1270 or higher will be accepted as a substitute for MATH-1240 for students who completed the math requirement prior to the fall 2016 semester.

³Students beginning program in fall semester (daytime track) must take RADT-1911, 2911 and 2921. Students beginning in spring semester (daytime track) must take RADT-191S, 291S and 292S. Students beginning in the fall semester (evening/weekend track) may take modular courses RADT-191A and 191B in place of RADT-1911 and must take RADT-291A, 291B, and 2921. RADT-191A & 191B are accepted in place of RADT-1911; RADT-291A & 291B are accepted in place of RADT-2911.

¹Students beginning program in fall semester must take RADT-1911, 2911 and 2921. Students beginning in spring semester must take RADT-191S, 291S and 292S. Students in the evening/weekend track may take modular courses RADT-191A and 191B in place of RADT-1911 and must take RADT-291A, 291B, and 2921. 191A & 191B are accepted in place of 1911; 291A & 291B are accepted in place of 2911.

⁴Students formally accepted into the program in fall 2016 or later must take ENG-1020 or ENG-102H. Students accepted into the program prior to fall 2016 may fulfill this requirement through a 3 credit course in one of the following areas: ENG, ASL, SPCH or foreign language. These students should meet with a counselor to confirm that their choice of course will meet the communications requirement.

 = 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). The on-line courses fulfill the "structured education" requirement as defined by the ARRT. The mammography curriculum is accepted for professional continuing education credits for radiologic technologists. With departmental approval, technologists may register for individual on-line modules with the exception of RADT 2930, Mammography Applications. However, the certificate can be obtained only after completing the entire course sequence in the order listed.

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:

- 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.
- Applicant must be a radiographer certified through the American Registry of Radiologic Technologists and possess a radiologic license through the State of Ohio. Documentation of ARRT certification and Ohio radiologic licensure must be submitted with the Health Careers Application.
- Applicants to the mammography program must first complete the general admission application to Cuyahoga Community College (<http://www.tri-c.edu/get-started/index.html>). Former Cuyahoga Community College students should contact the Enrollment Center at 800-954-8742 to reactivate their student record or reapply, if advised.
- Program applications for the short-term certificate in mammography may be obtained from the mammography website (www.tri-c.edu/mammography) and should be mailed to the address on the application.

Other Information:

- 10-12 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.

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MAMMOGRAPHY (Continued)

- Documentation of good health, immunizations, health insurance and CPR for the healthcare provider through the American Heart Association 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 Technologists.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
RADT-2510	Fundamentals of Mammography ...OR	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	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	3
RADT-2930	Mammography Applications	7
PROGRAM TOTAL		11

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, live sound reinforcement, audio electronics and music business. A field experience/internship component provides on-the-job training with local and national facilities. Graduates are employed in a wide variety of positions within the entertainment industry.

Program Manager: 216-987-4252

Program Admission Requirements:

- Application Required - contact RAT department at 216-987-3277 or david.kennedy@tri-c.edu.
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H
- Complete MATH-1xxx or higher
- Complete MUS-1010, 1020, 1030, 1040, or 1050
- Complete degree requirements for Social Behavioral Sciences

Other Information:

- GPA: 2.0

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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Program Sequences

RECORDING ARTS AND TECHNOLOGY (Continued)

Suggested Semester Sequence		
<u>Program Admissions Requirements</u>	<u>Semester</u>	<u>Credits</u>
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
MUS-1010	Survey of European Classical Music ... OR	3
MUS-1020	Survey of Jazz ... OR	3
MUS-1030	Survey of Rock and Roll ... OR	3
MUS-1040	Survey of African-American Music ... OR	3
MUS-1050	Survey of World Music	3
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		<u>3</u>
		12
<u>First Semester</u>		<u>Credits</u>
EET-1130	Basic Audio Electronics	3
MUS-1110	Music Business I	3
MUS-1130	MIDI Technology I	3
RAT-1300	Introduction to Recording	3
RAT-1311	Studio Operations	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
MUS-2140	Studio Maintenance	2
RAT-1320	Audio Transducers	3
RAT-1500	Recording Theory I	3
RAT-1511	Recording Lab I	2
RAT-1530	Digital Audio Theory	<u>3</u>
		13
<u>Third Semester</u>		<u>Credits</u>
RAT-1520	Audio Signal Processing	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>
		13
<u>Fourth Semester</u>		<u>Credits</u>
RAT-2540	Live Sound Reinforcement	3
RAT-2940	Audio Recording Field Experience	2
RAT-2990	Recording Arts and Technology Capstone C	3
Communication...(Select from American Sign Language, English, Foreign Language, or Speech Communication)		<u>3</u>
		11
PROGRAM TOTAL		64

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-1240 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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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RESPIRATORY CARE (Continued)

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
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
MATH-1240	Contemporary Mathematics or higher	<u>3</u> 13
 <u>First Semester</u>		 <u>Credits</u>
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
PSY-1010	General Psychology ... OR	3
PSY-101H	Honors General Psychology	
RESP-1300	Respiratory Care Equipment	4
RESP-1310	Cardiopulmonary Physiology	<u>3</u> 13
 <u>Second Semester</u>		 <u>Credits</u>
BIO-2341	Anatomy and Physiology II	4
PHIL-2050	Bioethics ... OR	3
PHIL-205H	Honors Bioethics	
RESP-1320	Acid-Base and Hemodynamics	2
RESP-1330	Cardiopulmonary Assessment and Pulmonary Diseases	5
RESP-1340	Pharmacology for Respiratory Care	<u>2</u> 16
 <u>Summer Session</u>		 <u>Credits</u>
RESP-2210	Introduction to Mechanical Ventilation	1
RESP-2300	Basic Therapeutic Procedures	3
RESP-2940	Respiratory Care Field Experience I	<u>1</u> 5
 <u>Third Semester</u>		 <u>Credits</u>
BIO-2500	Microbiology	4
RESP-2310	Mechanical Ventilation	4
RESP-2320	Pediatric/Neonatal Respiratory Care	2
RESP-2950	Respiratory Care Field Experience II	<u>2</u> 12
 <u>Fourth Semester</u>		 <u>Credits</u>
RESP-2330	Respiratory Home Care/Rehabilitation	1
RESP-2341	Patient Management Problems	1
RESP-2960	Respiratory Care Field Experience III C	<u>2</u> 4
 PROGRAM TOTAL		 63

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-1000 or higher (MATH-1410 or 1530)
- 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-1410 or 1530, 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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
4. Effectively educate, motivate and communicate healthy lifestyle behavior modifications.

(continued on next page)

Program Sequences

SPORT AND EXERCISE STUDIES (Continued)

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	<u>3</u>
		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	3
SES-1201	Fitness and Wellness Coaching	3
SES-2000	Essentials of Sports Injury Care	3
SES-2310	Advanced Training Concepts and Techniques	<u>3</u>
		15 - 16

<u>Third Semester</u>		<u>Credits</u>
BIO-2341	Anatomy and Physiology II ...OR	4
SES-xxxx	Fitness and Exercise Studies Elective	3
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	
SPCH-101H	Honors Fundamentals of Speech Communication	
PSY-1010	General Psychology ...OR	3
PSY-101H	Honors General Psychology	
SES-2100	Sport and Exercise Physiology	3
SES-2210	Exercise Testing, Measurement, and Evaluation	<u>3</u>
		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-2840	Practicum: Sport and Exercise Studies C	2
SES-xxxx	Fitness and Exercise Studies Elective	<u>3</u>
		14
PROGRAM TOTAL		60 - 62

¹BIO 1100 or CHEM 1010 and CHEM 1020 will be accepted for BIO 1500.

²BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

³Highly recommend MATH-1410 or MATH-1530 for students planning to transfer to a four-year college/university.

C = Capstone course.

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

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 a academic counselor to apply credits toward an Associate of Technical Studies degree.

Program Manager: 216-987-6146

Program Admission Requirements: Applications may be submitted while meeting requirements listed below. Deadline for application is June 30th.

- High School Diploma/GED
- ENG-1010 College Composition I.
- Complete MATH-0955 Beginning Algebra with "C" or higher.
- Complete MA-1020 with "C" or higher.
- Time limit on admissions requirements prior to application is seven years.
- GPA required: 2.0 admission requirements; 2.0 overall.

Other Information:

- 16 students accepted per year.
- MA-1020 must have been completed within the past seven years 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.
- 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Apply 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 given by the Certification Board for Sterile Processing and Distribution (CBSPD).

Suggested Semester Sequence

<u>Program Admissions Requirements</u>	<u>Semester</u>	<u>Credits</u>
ENG-1010 College Composition I ... OR		3
ENG-101H Honors College Composition I		
MA-1020 Medical Terminology I		3
		6

<u>First Semester</u>		<u>Credits</u>
BIO-1050 Human Biology ¹ ... OR		3
BIO-1100 Introduction to Biological Chemistry		
MATH-1100 Mathematical Explorations or higher ²		3
SURT-1700 Sterile Processing Tech I		4
SURT-1720 Introduction to Hospital Administration		1
		11

<u>Second Semester</u>		<u>Credits</u>
HTEC-1110 Ethics for Health Care Professionals ... OR		1
PHIL-2050 Bioethics		3
IT-1010 Introduction to Microcomputer Applications		3
SPCH-1000 Fundamentals of Interpersonal Communication ... OR		3
SPCH-1010 Fundamentals of Speech Communication		3
SURT-1710 Sterile Processing Tech II		4
SURT-1861 Clinical Experience: Sterile Processing		2
		13 - 15
PROGRAM TOTAL		30 - 32

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 apply coursework to the degree program should take MATH-1240.

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. Surgical technologists work with other surgical personnel to prepare the operating room for a variety of surgical cases. A surgical technologist may be employed in the surgical department of hospitals and outpatient surgery centers. 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. The program is fully accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). 1361 Park St.; Clearwater, FL 33756. Phone: 727-210-2350, Fax: 727-210-2354, www.caahep.org.

Program Manager: 216-987-6146

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the below requirements. Deadline to apply is May 31st.

- High School Diploma/GED
- Complete ENG-1010 College Composition I or ENG-101H with "C" or higher.
- Eligibility for MATH-1240 Contemporary Mathematics.
- Complete the following :
 - MA-1020
 - BIO-2331* (or 2330)
 - SURT-1000
- Time limit on admissions requirements prior to application is seven years (see 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 BIO-1500 with "C" or higher or complete CHEM-1010 and CHEM-1020 with "C" or higher.
- All admission requirements (except ENG-1010 and MATH-1240) 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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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's policies and procedures and surgeons' preferences.
6. Prepare graduates for the Certified Surgical Technologist (CST) Examination.

Suggested Semester Sequence

<u>Program Admissions Requirements 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	<u>1</u>
		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	<u>2</u>
		13

<u>Second Semester</u>		<u>Credits</u>
BIO-2500	Microbiology	4
SURT-1330	General Surgery	5
SURT-1911	Clinical Experience I	<u>3</u>
		12

<u>Summer Session</u>		<u>Credits</u>
SURT-1921	Clinical Experience II	<u>2</u>
		2

<u>Third Semester</u>		<u>Credits</u>
MA-2010	Medical Terminology II	2
MATH-1240	Contemporary Mathematics or higher	3
SURT-2300	Surgical Specialties	5
SURT-2851	Clinical Experience III	<u>3</u>
		13

<u>Fourth Semester</u>		<u>Credits</u>
PHIL-2050	Bioethics	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
SURT-2862	Clinical Experience IV C	<u>4</u>
		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-1240 or higher with a “C” or higher.
- Complete BIO-1100 or CHEM-1010 or higher with a “C” or higher.
- GPA required: 2.75 admissions requirements, 2.75 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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 ¹	3-4
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-1240	Contemporary Mathematics or higher ²	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 Session</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

C = Capstone course.

¹ CHEM 1010 and CHEM 1020 will be accepted in place of BIO-1100.

²MATH-1141 or MATH-1280 taken prior to Fall 2016 will be accepted in place of MATH-1240. MATH-1270 taken prior to Spring 2017 will be accepted in place of MATH-1240. MATH-1141, MATH-1270 and MATH-1280 will be accepted for program admission thorough Fall 2019 and will also meet the College’s math requirement for graduation through Summer 2021.

**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

This program has been deleted effective Fall 2015. Students currently in the program have two years to complete this degree until Summer 2017. After Summer 2017, degrees will no longer be granted for this program. Technical coursework from this program has been merged into the Media Arts and Filmmaking program and can be found under the Media Arts and Filmmaking subject area (MARS). Students currently in the program with questions regarding completing this degree or transitioning into the Media Arts and Filmmaking program or another program, should make an appointment to see a counselor.

**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 Admission Requirements:

- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 highly recommended
- MATH-0955 Beginning Algebra or appropriate score on math placement test for enrollment in 1000-level mathematics or higher highly recommended
- Complete VC&D-1000
- Contact Program Coordinator, Program Manager, or Counselor for additional information


Other Information:

- Non-degree students may enroll in individual courses with departmental approval.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>Credits</u>
<u>First Semester</u>		
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
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 & Hum	(see AAB/ AAS degree requirements)	<u>3</u>
		18
<u>Second Semester</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>		
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 and Beh Sci	(See AAB/ AAS degree requirements)	<u>3</u>
		15
<u>Fourth Semester</u>		
VC&D-2701	Media Design	3
VC&D-2991	Portfolio Preparation 	3
VCAD-2621	Advertising Studio I ...OR	3
VCGD-2631	Graphic Design I	3
VCGD-2431	Package Design	<u>3</u>
		12
	PROGRAM TOTAL	60

 = 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.

Other Information:

- Contact Program Coordinator, Program Manager, or Counselor for additional information.
- Non-degree students may enroll in individual courses with departmental approval.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

<u>First Semester</u>	Suggested Semester Sequence	<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
VC&D-1430	2D Design	3
		18

<u>Second Semester</u>		<u>Credits</u>
VC&D-2301	Graphic Design and Illustration	3
VC&D-2701	Media Design ... OR	3
VC&D-2991	Portfolio Preparation	3
VCGD-1500	Advertising and Design	3
VCGD-2231	Publication Design ... OR	3
VCGD-2331	Brand Identity Design ... OR	3
VCGD-2431	Package Design	3
VCIL-1640	3D Design	3
		15
	PROGRAM TOTAL	33

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-1xxx 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.

This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

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

1. Apply effective verbal, written and visual communication skills to present a concept, idea, or portfolio to co-workers, clients and other professionals.

(continued on next page)

**VISUAL COMMUNICATION & DESIGN
(Illustration) (Continued)**

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.

Suggested Semester Sequence

<u>First Semester</u>		<u>Credits</u>
ART-1050	Drawing I	3
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	3
VC&D-1000	Visual Communication Foundation ... OR	3
ART-1080	Visual Design I	3
VC&D-1015	Digital Studio Basics	3
VCIL-1141	Rendering Techniques	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1430	2D Design	3
VCIL-1640	3D Design	3
ART-xxxx	Art Elective ... OR	3
VCXX-xxxx	Visual Communications elective	<u>3</u>
Communication...	(See AAB Degree requirements)	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
VCIM-2270	Animation for the Web and Media ... OR	3
VCIM-1200	Game Design I: Introduction to Game Design	3
Arts & Hum	(see AAB/AAS degree requirements)	<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
VCIL-2341	Illustration for Story, Sequence & Narrative ... OR	3
VCIL-2440	3D Simulation	3
VCIL-2540	3D Studio ... OR	3
VCIL-2641	Illustration Studio	3
ART-xxxx	Art Elective ... OR	3
MARS-xxxx	MARS elective ... OR	3
VCXX-xxxx	Visual Communications elective	3
VC&D-2991	Portfolio Preparation C	3
Soc & Beh Sci/Nat 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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 lifelong 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	<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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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 lifelong 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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

(continued on next page)

Program Sequences

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>		
MARS-1180	Introduction to Media Arts and Filmmaking	3
VC&D-1200	Typography and Layout	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
- Eligibility for MATH-1000 level or higher highly recommended
- Complete VC&D-1000 Visual Communication Foundation
- Complete VC&D-1015 Digital Studio Basics

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 Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.
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-1xxx	1000-level MATH course or higher	3
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VCIM-1200	Game Design I: Introduction to Game Design (b)	
VCIM-1570	Web Publishing I: HTML (a)	-
		12

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VISUAL COMMUNICATION & DESIGN (Web and Interactive Media) (Continued)

<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-1400	Game Design II: Game Engines (b)	
VCIM-1770	Web Publishing II: Site Theory & Construction (a)	
VCIM-1970	Midpoint Portfolio Review	1
Communication...	(See AAB Degree requirements)	3
		13
<u>Third Semester</u>		<u>Credits</u>
VC&D-2530	Professional Practice in Visual Communication and Design	3
VCIM-2200	Game Design III: Game Design Studio (b)	
VCIM-2280	Web Publishing III: Media Rich Websites (a)	
VCIM-2270	Animation for the Web and Media	3
VCIM-2371	Interactive Media I	3
Arts & Hum	(see AAB/AAS degree requirements)	3
		12
<u>Fourth Semester</u>		<u>Credits</u>
VC&D-2830	Cooperative Field Experience ... OR	3
VCIM-2071	Service-Learning Web and Interactive Studio ... OR	
VCIM-2940	Field Experience	
VC&D-2991	Portfolio Preparation C	3
VCIM-2290	Web Publishing IV: Data Driven Sites ... OR	3
VCIM-2380	Interactive Media II: App Design ... OR	
VCIM-2401	Game Design IV: Game Publishing	
VCXX-xxxx	Visual Communication & Design elective	3
Soc & Beh Sci/Nat Sci	(see AAB/AAS Degree Requirements)	3
		15
Program Subtotal		52

C = Capstone course.

OPTIONS

<u>(A) Technical Electives for Web Design & Construction 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
PROGRAM TOTAL - OPTION A		61

<u>(B) Technical Electives for 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
PROGRAM TOTAL - OPTION B		61

ELECTIVES

Web Design & Construction Credits

The following courses are recommended electives for students pursuing Web Design & Construction:

MARS-1180	Introduction to Media Arts and Filmmaking	3
VC&D-2701	Media 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
VCIM-2290	Web Publishing IV: Data Driven Sites	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
VCPH-1261	Photography I	3

Game Design Credits

The following courses are recommended electives for students pursuing Game Design:

VC&D-2701	Media Design	3
VC&D-2830	Cooperative Field Experience	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

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.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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.

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Program Sequences

GAME DESIGN (Continued)

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>Credits</u>
<u>First Semester</u>		
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIM-1200	Game Design I: Introduction to Game Design	3
VCIM-1400	Game Design II: Game Engines	<u>3</u>
		12
<u>Second Semester</u>		
VCIL-2040	3D Motion	3
VCIM-2200	Game Design III: Game Design Studio	3
VCIM-2270	Animation for the Web and Media	3
VCIM-2401	Game Design IV: Game Publishing	<u>3</u>
		12
PROGRAM TOTAL		24

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-1000 level or higher is highly recommended
- Complete VC&D-1000
- Complete VC&D-1015

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Program Learning Outcomes: This program is designed to prepare students to demonstrate the following learning 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>Credits</u>
<u>First Semester</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	<u>-</u>
		15
<u>Second Semester</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	<u>3</u>
		15
PROGRAM TOTAL		30

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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 V.

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 VI.

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

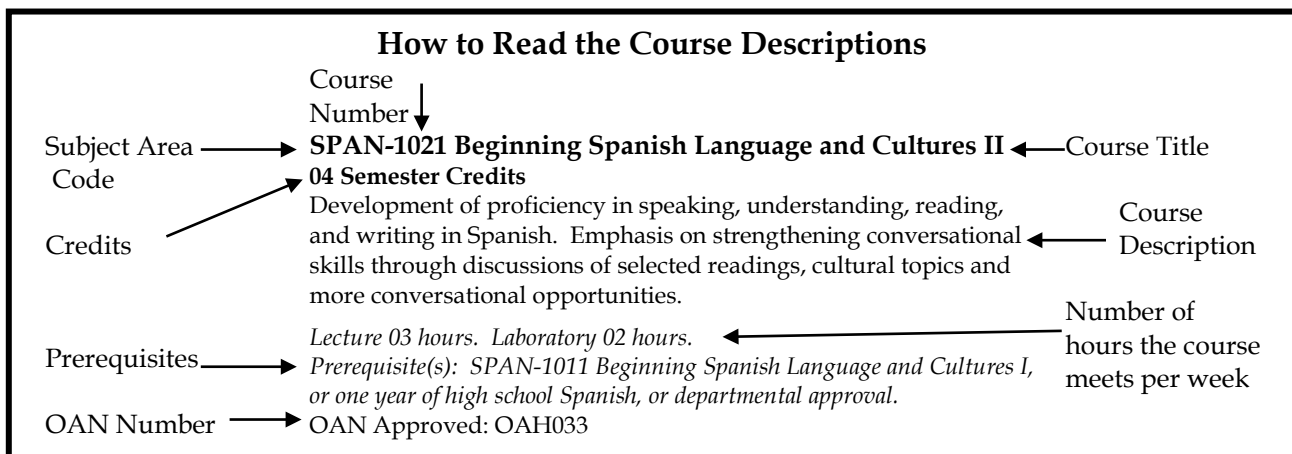
Prerequisites, if any, are listed at the end of each course description. Prerequisites are established by each department, for each course in that department, to ensure that the student has an adequate and sufficient background to enroll in the course and achieve success. Students must have completed 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 Filmmaking	MARS
Ironworking	ATIW	Medical Assisting	MA
Lifting Technologies	ATLT	Medical Laboratory Technology	MLT
Manufacturing Technology	ATMT	Music	MUS
Millwrighting	ATMW	Nuclear Medicine	NMED
Operating Engineers	ATOE	Nursing	NURS
Painting	ATPT	Occupational Therapy Assistant Technology	OTAT
Pile Driving	ATPD	Optical Technology	OPT
Pipefitting	ATPF	Paralegal Studies	PL
Plumbing	ATPL	Pharmacy Technology	PHM
Sheet Metal Working	ATSM	Philosophy	PHIL
Sign and Display	ATSD	Physical Education	PE
Teledata	ATTC	Physical Science	PSCI
Art	ART	Physical Therapist Assisting Technology	PTAT
Automotive Technology	AUTO	Physician Assistant	PA
Biology	BIO	Physics	PHYS
Business Administration	BADM	Plant Science and Landscape Technology	PST
Chemistry	CHEM	Political Science	POL
Chinese	CHIN	Practical Nursing	PNUR
Captioning and Court Reporting	C&CR	Psychology	PSY
Construction Engineering Technology	CNST	Radiography	RADT
Criminal Justice	CJ	Recording Arts and Technology	RAT
Dance	DANC	Religious Studies	REL
Deaf Interpretive Services	DIS	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 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 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.

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 Credit Schedule of classes for current 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 department or Credit Schedule of classes for current 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 department or Credit Schedule of classes for current 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): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate score on Math placement test.

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 employers' related taxes and preparation of various payroll tax forms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ACCT-1310 Financial Accounting, or ACCT-1020 Applied Accounting; and ACCT-2830 Cooperative Field Experience, 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. Completion 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): None.

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): MATH-0955 Beginning Algebra or appropriate Math placement score to enroll in MATH-1000 level Mathematics.

OAN Approved: OBU010

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: OBU011

ACCT-1520 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-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-1240 Contemporary Mathematics or higher, 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-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 or concurrent enrollment.

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-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-2220 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-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.

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.

OAN Approved: OFL025

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-2412 Advanced American Sign Language I
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-2020 Intermediate American Sign Language II, or appropriate assessment score or ASL placement/skill assessment.

**ASL-2420 Advanced American Sign Language II
04 Semester Credits**

Study of particular dialogues and drills, from text, video and original work, with emphasis on engaging in impromptu conversational and presentational activities. Practice at an increasingly complex advanced level, both receptively and expressively. Community engagement and lab projects may be required outside the classroom.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ASL-2412 Advanced American Sign Language I.

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-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.

OAN Approved: OSS002

**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.

Lecture 01-03 hours. Laboratory 03 hours.

Other Required Hours: 75 hours of supervised field experience.

Prerequisite(s): Departmental approval: approval of instructor.

ANTH-2110 Archaeology

03 Semester Credits

Investigation of the human past using archaeological methods and perspectives. Provides a survey of significant archaeological findings and interpretations from across the globe.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I.

OAN Approved: TMSBS

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 MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, 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 MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, 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 MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, and concurrent enrollment 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 Credit

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 MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, 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, 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, eligibility for MATH-0955 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-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 MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, 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): MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, 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): Departmental approval: admission to any Applied Industrial Technology program.

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.

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.

Applied Industrial Technology (Cement Masonry) • (Communication Transport Systems) _____

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 Credit**

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 Credit**

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 Credit**

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 Credit**

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.

ATCW-2070 Information Transport Circuits**01 Semester Credit**

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 Credit**

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-1030 Laborers: Introduction to Transits
02 Semester Credits**

A study of construction site layout for building positioning using digital instruments. Emphasis is placed on instrument applications and field data recording.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval by Program Training Director.

**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 Credit**

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.

Applied Industrial Technology (Construction Tending and Hazardous Material Abatement)

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 Guniting **02 Semester Credits**

Properties of Guniting, 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.

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.

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
(Lifting Technologies) - ATLT

ATLT-1000 Orientation for Lifting Technologies
02 Semester Credits

Introductory course covering the history and values of the Mazzella Company M/C, including career opportunities and advancement through continuing education and

apprenticeship. Included are basic technical training and application as part of the rigging industry.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental Approval: Admission to Lifting Technologies apprenticeship program.

ATLT-1010 Industrial Safety
01 Semester Credit

Certification course covering industrial safety as it pertains to motorized lifts. Included are fork lifts and aerial lifts used in the crane and rigging industry for the movement of personnel, equipment, and/or material.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

ATLT-1020 Introduction to Lifting and Rigging
02 Semester Credits

Introductory course into the Lifting and Rigging Industry, the applied practices and applications of slings.

Introduces various types of rigging gear in use, rigging hardware proper use and pre-use inspection. Explore loads, sling angle stresses, and common rigging applications and practices.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-1030 Introduction to Wire Rope
01 Semester Credit

Introductory course covering common types of wire rope used in the lifting and rigging industry. Includes basic understanding of terminology, identification of ropes, construction types as well as proper use, inspection, and maintenance of wire rope. The physical properties of wire rope will also be covered.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

ATLT-1040 Safety in Lifting and Rigging I
01 Semester Credit

Introductory course covering common types of slings used in the rigging industry. Includes basic understanding of terminology, proper use, and maintenance of slings. In addition, the relationship of the rated load, including design factors and efficiency using sling charts and applied math concepts, for sling selection and proper lifting procedures will be covered.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

**ATLT-1050 Rigging Geometric
02 Semester Credits**

Provides an emphasis on the techniques used for understanding stresses common in lifting and rigging. Review of trade and industry math and applications commonly found in lift plans calculations. Includes the interpretation of drawings, technical drawings of lifting applications.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admissions to Lifting Technologies apprenticeship program.

**ATLT-1060 Layout and Fabrication Procedures
01 Semester Credit**

Introduction to the layout and fabrication techniques for slings and rigging gear. Covers the calculations and sizing of various types of slings. Includes practical hands on learning of the techniques of layout and fabrication to manufacture slings and the basics of reading drawings, technical drawings, and prints.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

**ATLT-1070 Blue Print Reading for Rigging I
02 Semester Credits**

Introduction to reading and interpreting working drawings for fabrication processes of both weldments and fabricated slings. Covers the fabrication prints of various types of rigging gear in use. Explore reading drawings including dimensions, bill of material, weld symbols, and specialty notes.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

**ATLT-1080 Lifting Technologies Safety Training
01 Semester Credit**

Covers the safety activities required in a lifting and rigging fabrication plant. Includes understanding of the hazards associated with wire rope, synthetic, and chain sling fabrication facilities. The safety considerations required for the handling, storage, shipping and receiving of rigging materials will also be covered.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

**ATLT-1090 Intro to Welding for Lifting Technologies
02 Semester Credits**

Covers the safety requirements for welding and cutting processes used in the lifting technologies industry. The physics of welding, various joints and positions and guided practices using oxygen - fuel and gas cutting is covered. In addition, welding processes using metal inert gas (MIG) and tungsten (TIG) used for specific applications will be addressed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

**ATLT-1100 Introduction to Inspections: Field Tablets
IC3****01 Semester Credit**

Introductory course covering the rigging inspection connection process as performed on a mobile computer/tablet in the field. Includes utilizing an electronic tablet, the inspection data and report delivered to the end user. Includes creating, maintaining and organizing an asset management system, -Inspection Connexion- IC3.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

**ATLT-1110 Technologies in Rigging
01 Semester Credit**

Provides an emphasis of the technologies used in lifting and rigging industry. Incorporates the use of computers and specialized equipment to learn how to communicate and solve business and practical shop problems.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to apprenticeship program in Lifting Technologies.

**ATLT-2010 Lifting Project Module
01 Semester Credit**

Introductory course covering the lifting project module input and workflow in Adjutant. Includes utilizing Adjutant project module, task management, and route maintenance to deliver a process and workflow in conjunction with the appropriate project types.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

**ATLT-2020 Proof Test Operations
01 Semester Credit**

An introductory course into the safe testing processes and requirements for operating test equipment for non-destructive testing of slings, rigging gear and special lifting assemblies and hardware

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2040 Wire Rope Applications I

01 Semester Credit

Intermediate course covering wire rope applications common to the lifting and rigging industry. Includes understanding wire rope terminology, wire rope constructions, characteristics of various wire rope constructions, and general understanding of wire rope selection.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2050 Blue Print Reading for Rigging II

02 Semester Credits

Advanced reading and interpreting of working drawings for fabrication processes of both weldments and fabricated slings including inspections. Covers fabrication prints of various types of rigging gear in use. Real-world applications, inspection drawings, tolerance stacking, surface finishes, specialty weld symbols, electrical schematics and material alternatives.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2130 Overhead Crane Electrical

02 Semester Credits

Covers electrical maintenance procedures for all types of Cranes. Demonstrate the ability to troubleshoot electrical problems and determine effective methods of installing or repairing electrical components in any type of electric overhead crane, hoist, or workstation.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2140 Overhead Crane Mechanical Operations

02 Semester Credits

Introductory course in identifying and understanding the mechanical components of overhead cranes and hoists. An overview of proper component terminology, types, uses and the subsequent selection of various mechanical components and devices that make up an Overhead Crane or hoist.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2170 Overhead Crane Inspector

01 Semester Credit

Advanced course covering crane safety standards, as prescribed by the Occupational Health and Safety Administration, different crane types, and crane components. Included are procedures for crane inspections, configurations and reporting, and report

delivery to the end user with critical findings.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

ATLT-2280 Overhead Crane Inspection Safety

02 Semester Credits

Safety course covering inspection of overhead cranes. Included are the use of aerial lifts, Personal Protective Equipment (PPE), and fall protection. Also covered is electrical safety concerns related to specific inspections.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2500 Rigging Inspector Certification

03 Semester Credits

Introductory course covering the OSHA and ASME requirements for the visual inspection of alloy chain slings, metal mesh slings, wire rope slings, synthetics slings, round slings, and rigging hardware within the rigging industry. Includes the basic understanding of terminology, OSHA 1910.184, ASME B30.9, ASME B30.26 and application of these standards.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

ATLT-2510 Sling Fabrication - Flat Web & Chain

01 Semester Credit

Introduction to the layout and fabrication techniques for flat web slings and chain slings. Covers the calculations and sizing of various types of flat web and chain slings. Practical hands on learning of the techniques of layout and fabrication to manufacture flat web and chain slings and will cover basics of reading drawings, technical drawings and prints.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: Admission to Lifting Technologies apprenticeship program.

ATLT-2520 Socketing

01 Semester Credit

Covers the basic types and fabrication of socket assemblies. Outline the techniques and processes required to fabricate these assemblies. Features the application and installation procedures of the various types of socketing.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Lifting Technologies apprenticeship program.

**APPLIED INDUSTRIAL TECHNOLOGY
(Manufacturing Technology) - ATMT****ATMT-1000 Mechanical and Spatial Relations****04 Semester Credits**

Relationship between two-view and three-view images. Basics of visualizing three-dimensional objects from two-dimensional front, side, and top views. 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 along with 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.

Applied Industrial Technology (Manufacturing Technology)

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, tigger, 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.

Applied Industrial Technology (Operating Engineers)

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-1015 Heat, Matter and Energy****02 Semester Credits**

A study of heat theory, matter and energy as they relate to the pipefitting service industry. Included are relative definitions, mathematical conversions, and discussion of the laws of thermodynamics and of related topics covering applications to the heating and cooling industry.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1025 Basic Controls with Electricity**02 Semester Credits**

Course covers the application and theory of electricity as it relates to the heating ventilation and air conditioning industry. Also discussed are temperature controls including thermocouples and thermal resistors.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1035 Refrigeration Motors and Applications**02 Semester Credits**

Course discusses different types of motors, motor operation and the applications of motors in the refrigeration industry. Also covered are various motor devices use for overload protection and changing electrical current.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1045 Motor Controls and Troubleshooting**02 Semester Credits**

Basic electric motor course used for servicing refrigeration equipment. Course covers motor components and operation, safety considerations for restarting and servicing motors. Also included is a discussion of various electrical and mechanical problems that may cause motor malfunction.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1055 Evaporators, Condensers, and Compressors 02 Semester Credits

Course covers the function and purpose of evaporators, condensers and compressors used in the refrigeration industry. Included is a discussion of the respective components and the respective operation with respect to each other and performance in the air cooling process.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1065 Expansion Devices and Special Components 02 Semester Credits

Course covers expansion devices used in the refrigeration process, specific terminology and the operation of the respective components. In addition, the purpose and operation of expansion devices, including thermostatic and automatic valves, and other special refrigeration enhancing components will be addressed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

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-1085 Refrigeration and Refrigerants 02 Semester Credits

Introduction to the refrigeration process including relationships between pressure and boiling points and vaporization and cooling coils. Also covers refrigeration cycles, plotting and interpretation of pressure/enthalpy charts.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1095 Systems Charging 02 Semester Credits

Course covers the charging of refrigerants in vapor and liquid states into air conditioning and heat pump systems and refrigerant oil with systems applications. Also included are the identification and operation of precision instrument for calibrating procedure.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1125 System Evacuation 02 Semester Credits

Basic course covering the evacuation procedures followed in initiating refrigeration equipment and systems. Also included are tool and equipment identification and use, proper selection and application of each.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1135 Refrigeration Applications and Ice Machines 02 Semester Credits

Refrigeration course discussing various refrigeration types and conditions for proper applications. Also included are defrost methods for walk-in equipment, ice machines operation and product harvest and equipment service procedures.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-1145 Refrigeration Transport and Problem solving 02 Semester Credits

Advanced course describing the refrigeration processes employed in the transportation of frozen and perishable goods using various vehicles of transport. Included are typical operating conditions for commercial refrigeration and troubleshooting common problems.

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 Credit

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 Credit**

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-2115 Electric Heat**01 Semester Credit**

Introductory course covering electric heat devices including hydronic boilers and controls that regulate equipment operation and safety. Included are service technician repair and preventative maintenance guidelines.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2125 Gas Heat**02 Semester Credits**

Course covers gas furnaces, operation and controls, including safety features of gas heat. Troubleshooting and customer service is also demonstrated and discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2130 Oil and Hydronics**02 Semester Credits**

Course discusses the types operation of oil and hydronic furnaces including the atomization of fossil fuels and water systems used for the ignition and circulation process. Maintenance procedures for service of the respective systems including oil burning efficiency and damping effects.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2145 Air Distribution and Psychrometrics**02 Semester Credits**

Course covers air quality, psychrometric and air distribution of heat systems with respect to the pipefitting industry. Properties of air and air pollutants, heat recovery and purification will also be discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2155 Air Conditioning Installation and Controls**02 Semester Credits**

Course covers different types of air conditioning systems and related controls. In addition, installation and system balancing and troubleshooting mechanical problems are addressed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2165 All Weather Systems**02 Semester Credits**

Basic refrigeration course covering the concepts and operation of year round air conditioning systems including reverse cycle refrigeration and heat pumps. In addition, open and closed pump systems and effects on water quality will be covered.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to Pipefitter's apprenticeship program.

ATPF-2175 Domestic Refrigeration**02 Semester Credits**

Covers the refrigeration cycle and process of domestic refrigeration including component function and defrost procedures. Also included are trouble shooting and maintenance procedures and related safety hazards.

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, journeyman, 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 Credit**

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 hour. 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 Credit**

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 Credit**

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 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): 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 Credit**

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.

OAN 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.

OAN Approved: 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.

OAN 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.

OAN 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 effect 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 (1 of 2 courses, both must be taken)

**ART-202H Honors Art History Survey: Prehistoric to Renaissance
03 Semester Credits**

Introduction to the major works of visual art in Western cultures from Prehistory to the early Renaissance including Paleolithic, Neolithic, Egyptian, Ancient Near Eastern, Greek, Etruscan, Roman, Byzantine, Islamic, Early Medieval, Romanesque, Gothic, and fourteenth-century and early fifteenth-century art in Northern Europe, Spain, and Italy. Critical examination of style and art historical analysis of objects from early Western cultures and civilizations.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment or ENG-101H Honors College Composition I or concurrent enrollment.

**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 (2 of 2 courses, both must be taken)

**ART-203H Honors Art History Survey: Late Renaissance to Present
03 Semester Credits**

Introduction to the major works of visual art in Western cultures from the late Renaissance to the present including Fifteenth Century Italy and Northern Europe, Sixteenth Century Italy, Northern Europe, and Spain, Mannerism, Baroque and Rococo, Neoclassicism, Romanticism, Nineteenth, Twentieth, and Twenty-First Centuries Art in Europe and the United States. Critical examination of style and art historical analysis of objects from late Renaissance to the present.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment; or ENG-101H Honors College Composition I or concurrent enrollment.

**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 01 hour. 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-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.

CTAN Approved: CTAUT003

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-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): MATH-0955 Beginning Algebra, or sufficient score on math placement test.

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 crosslisted as PST-1300. Credit can only be earned once for either course.] Plant structure and diversity is examined through the study of the cells, tissues, and organs of plants, as well as their life cycles and reproduction. The physiology of plants is explored through the study of plant transport, nutrients, hormones, growth, and metabolism. Additionally, horticulturally significant bacteria, protists, and fungi are examined.

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, porcine and domestic fowl species. Focuses on cellular biology, tissues and membranes, and the integumentary, skeletal, muscular, nervous, endocrine, and circulatory systems with emphasis on 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, avian and porcine species. Focuses on lymphatic, digestive, respiratory, urinary and reproductive systems. Immunology, pregnancy, lactation, blood and genetics considered. Laboratory includes preserved and fresh specimens, models, microscopic observations, demonstrations 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): MATH-0955 Beginning Algebra or appropriate Math placement score and eligibility for ENG-1010 College Composition I.

OAN 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 MATH-0955 Beginning Algebra or appropriate Math placement score.

OAN 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.

OAN 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**

Introductory level course. Topics include: structure and function of DNA, patterns of inheritance, gene expression and mutations, population genetics and gene technology.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-1040 The Cell and DNA, or BIO-1420 Anatomy and Physiology of Domestic Animals II, or BIO-2341 Anatomy and Physiology 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**

Exploration of current biological theories of aging with emphasis on humans. Fundamental concepts of cell biology and physiology will be used to study extrinsic and intrinsic factors of aging. Topics will include normal age related changes and pathology in body systems, senescence, genetics, life expectancy, and improving longevity.

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**

Structure and function of cells, tissues, and organs of the human cardiovascular, lymphatic/immune, respiratory, urinary, digestive, and reproductive systems. Cellular division, embryological and fetal development, classical genetics and genetic technology considered. Laboratory may include demonstrations, microscopic observations, anatomical models, and videos.

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**

The diversity of the microbial world is explored through subjects including microbial ecology and evolution, structure and function of microorganisms, metabolism and genetics, control of microorganisms, and host-microbe interactions.

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

Introductions to the functions of business in the global marketplace, including comparison of the various forms of business domestically and globally, constructing personnel management and leadership skills, and identifying financial, marketing and management skills in the business environment.

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-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 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 components needed to develop an effective business plan and/or skills needed to effectively manage a small business. The course includes the principles needed to operate a small business and is also beneficiary for those who desire to upgrade their skills in business management.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): None.

BADM-1460 Workers' Compensation Law**03 Semester Credits**

[This course is crosslisted as PL-1460. Credit can only be earned once for either course.] 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 injured worker forms and employer forms. Practice in calculating compensation for injuries, determining and preparing employer defenses, and determining and creating both injured worker and employer appeals.

Lecture 03 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-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-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-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 departmental 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-1401 Speedbuilding and Transcription at 100 WPM

03 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 06 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-1451 Speedbuilding and Transcription at 140 WPM

03 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.

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-1601 Court Reporting Technology 04 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 02 hours. Laboratory 06 hours.

Prerequisite(s): C&CR-1220 Voicewriting III, or C&CR-1330 Realtime Theory II.

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-2401 Speedbuilding and Transcription at 180 WPM

03 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 06 hours.

Prerequisite(s): C&CR-1451 Speedbuilding and Transcription at 140 WPM or C&CR-1210 Voicewriting II.

C&CR-2451 Speedbuilding and Transcription at 225 WPM

03 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 06 hours.

Prerequisite(s): C&CR-2401 Speedbuilding and Transcription at 180 WPM.

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-1451 Speedbuilding and Transcription at 140 WPM, and C&CR-1601 Court Reporting Technology; or C&CR-1220 Voicewriting III.

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-2401 Speedbuilding and Transcription at 180 WPM; or concurrent enrollment in C&CR-2451 Speedbuilding and Transcription at 225 WPM, and C&CR-2470 Advanced Technology.

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 departmental 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-1601 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-2602 Technical Terminology

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-1451 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): C&CR-2401 Speedbuilding and Transcription at 180 WPM; or concurrent enrollment in C&CR-2451 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 per semester (5 hours per week 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 Credit**

[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 hours. 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-0955 Beginning Algebra, or appropriate score on Math Placement Test.

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): ENG-101H Honors College Composition I; and MATH-0955 Beginning Algebra, or appropriate score on Math Placement Test; 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-1080 Herbal Medicines and Natural Products**03 Semester Credits**

The course is designed for those interested in education in the areas of natural products and herbal remedies. Definition of the term "natural product", the regulatory dilemma and the marketing of herbal products, the use, risk and safety of herbal preparations, common herbs found in the market and their efficacy and interactions are covered. How to make and guide a rational decision regarding the choice and use of natural herbal products is covered.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, or appropriate score on assessment test 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-0965 Intermediate Algebra, or sufficient score on Math assessment test; or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC008 (1 of 2 courses, both must be taken)

CHEM-130L General Chemistry Laboratory I**01 Semester Credit**

Basic laboratory experiments which correlate with chemical concepts, principles and processes of General Chemistry II. Emphasis on techniques and procedures.

Lecture 00 hours. 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-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-1530 College Algebra, and MATH-1540 Trigonometry; or MATH-1580 Precalculus, or sufficient score on Math assessment test; or departmental approval: equivalent knowledge or skills.

OAN Approved: OSC008

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 Credit**

Basic laboratory experiments which correlate with chemical concepts, principles and processes of General Chemistry. Emphasis on technique and procedures.

Lecture 00 hours. 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 departmental 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 I.

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-1731 Construction Print Reading, or departmental approval.

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-1731 Construction Print Reading**03 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 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

CNST-1740 Fundamentals of Geographic Information Science**03 Semester Credits**

Introduction to geographic information science with a focus on learning Geographic Information Systems (GIS) software. Topics include: introduction to map interpretation and analysis, coordinate systems, map projections, scales, topographic mapping, accuracy versus precision, spatial analysis techniques, types of thematic mapping, sources of data, basic database management, and an introduction to applications in engineering and engineering technology.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1530 College Algebra; and IT-1010 Introduction to Microcomputer Applications, or MET-1120 Computer Applications and Programming; or departmental approval.

CNST-1750 Construction Safety**03 Semester Credits**

The theories and principles of construction safety and health applied to real-world setting. Upon completion of course materials and required attendance hours, students receive their OSHA 30 certification.

Lecture 03 hours. Laboratory 00 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-1540 Trigonometry; and CNST-1731 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-1731 Construction Print Reading; and MATH-0910 or appropriate score on Math placement test to enroll in MATH-0955; or departmental approval.

OAN Approved: OET016; CTAN Approved: CTCON003

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 hour. Laboratory 04 hours.

Prerequisite(s): CNST-1731 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; and MATH-0910 Basic Arithmetic and Pre-Algebra or appropriate score on Math placement test to enroll in MATH-0955, 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-1731 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-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-2510 Introduction to Asset Management**03 Semester Credits**

Introduction to asset management with a focus on utility systems spread over a geographic region. Principles of cartography and presentation of geographic information to be utilized in presenting information. Coordinate systems, map projections, scale, topographic mapping, thematic mapping, spacial analysis methods, and mapping accuracy are introduced. Use Geographic Information Systems (GIS) to analyze and model engineering systems. Probability models and ways to achieve levels of service within an overall system. Laboratory element with case studies incorporated.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MET-2430 Engineering Probability and Statistics; and CNST-2110 Basic Survey Practices, or CNST-1410 Architectural CAD I, or CNST-1730 Construction Print Reading.

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-2830 Cooperative Field Experience

01-03 Semester Credits

Limited to students in Cooperative Education Program. Employment in an approved construction/engineering company 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.

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

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.

CTAN Approved: CTBPO

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.

CTAN Approved: CTBPO

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.

CTAN Approved: CTBPO

CJ-2380 Defensive Driving

02 Semester Credits

Emergency vehicle operation under strenuous conditions for law enforcement.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): CJ-1000 Introduction to Criminal Justice, and departmental approval.

CTAN Approved: CTBPO

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-1200 Conditioning for the Performing Artist I
01 Semester Credit

Introduce and practice basic physical conditioning techniques and exercises to support training and performance. Focus on correct practice, experiential anatomy, alignment, control, balance, breath, and integrating the mind and body (somatics). Exercises are practiced on the floor, sitting, standing, and throughout the studio. Special equipment: Pilates/yoga mat and towel. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 02 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-1401 African Dance I
01 Semester Credit

First in a two-course sequence. Introduction to the fundamentals and basic movements of dances from West Africa. Experience traditional dances that celebrate rites of passage, harvest, courtship and healing/celebration of life. Through these traditional dances and rhythms, dancers will understand the commonalities of dance and music in world cultures and build mutually supportive relationships, reflective of actual dance in West African villages. Community is achieved through dance and collective work towards a final presentation. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): None.

DANC-1501 Dance Fundamentals**03 Semester Credits**

Introduction and practice of fundamental ballet, modern/contemporary, and jazz dance techniques. Creative exploration through basic dance improvisation and choreography. Emphasis on development of body and spatial awareness, strength, flexibility, and coordination within various dance forms. Exercises and basic dance combinations performed on the floor, at the ballet barre, and traveling through the studio space. Reflection on cultural and historical context. Discussion of related topics.

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-1520 Ballet I**01 Semester Credit**

First in a three-course sequence. Covers the fundamentals of classical ballet to prepare students for further training in ballet. Emphasis on developing strength, flexibility, postural alignment, and endurance in the area of ballet technique and conditioning. Follows a typical ballet class structure with an emphasis on mastering basic barre exercises. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): DANC-1501 Dance Fundamentals or permission of instructor.

DANC-1530 Contemporary/Modern Dance I**02 Semester Credits**

First in a three-course sequence. Introduction and practice of fundamental movement vocabulary and concepts of modern/contemporary dance. Warm up, center, and traveling movement sequences practiced on the floor, standing, and through studio space. Emphasis on body awareness, spatial awareness, and musicality. Discover the body as an expressive instrument. Build biomechanical, aesthetic, and historical foundations for further contemporary/modern dance training. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 04 hours.

Prerequisite(s): DANC-1501 Dance Fundamentals.

DANC-1540 Jazz Dance I**01 Semester Credit**

First in a two course sequence. Introduces principles of jazz dance technique and styles. Covers the fundamentals through basic physical skills, terminology, and history.

Taught in progression, teaching basics in the beginning and each week building upon that foundation.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): DANC-1501 Dance Fundamentals; or departmental approval permission of instructor.

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-1501 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.

DANC-2400 African Dance II**01 Semester Credit**

Provides a deeper exploration of the fundamentals and basic movements of dances from West Africa. Experience traditional dances that celebrate rites of passage, harvest, courtship and healing/celebration of life. Through these traditional dances and rhythms, dancers will gain deeper understanding of the commonalities of dance and music in world cultures and build mutually supportive relationships. Dancers assume leadership and increase individual contributions to community by working towards a final presentation. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): DANC-1401 African Dance I.

DANC-2520 Ballet II**01 Semester Credit**

Second in a three-course sequence. Covers intermediate classical ballet technique to prepare students for more advanced training in ballet. Emphasis will be placed on mastery of fundamental ballet exercises at the barre, with intermediate level execution of center floor combinations. Students will follow a typical ballet class structure with an emphasis on clarity of movement, and increased speed, and proper technique. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): DANC-1520 Ballet I.

DANC-2530 Contemporary/Modern Dance II**02 Semester Credits**

Second in a three-course sequence. Continued practice of fundamental movement vocabulary and concepts of contemporary/modern dance. Warm up, center, and traveling movement sequences practiced on the floor, standing, and through studio space. Further emphasis on body awareness, spatial awareness, musicality, and clarity. Develop the body as an expressive instrument. Build biomechanical, aesthetic, and historical foundations for further contemporary/modern dance training. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 04 hours.

Prerequisite(s): DANC-1530 Contemporary/Modern Dance I, or departmental approval.

DANC-2540 Jazz Dance II**01 Semester Credit**

Second in a two-course sequence. Continuation of the principles of jazz dance technique and styles. Students will further explore the principles of basic physical skills, terminology, and history of jazz at an intermediate level. The course is taught in progression, teaching basics in the beginning and each week building upon that foundation. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): DANC-1540 Jazz Dance I.

DANC-2620 Ballet III**01 Semester Credit**

Final class in a three-course sequence. Building on the fundamentals of prior classes, students will apply technique to the execution of performing complex combinations across the floor. Development of spatial awareness, musicality, strength, and flexibility will be incorporated with additional emphasis on movement dynamics. Proper jumping, leaping, and turning techniques will be emphasized. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): DANC-2520 Ballet II.

DANC-2630 Contemporary/Modern Dance III**02 Semester Credits**

Last in a three-course sequence. Further practice of movement vocabulary and concepts of contemporary/modern dance with emphasis on increasing physical competence and application. Warm up, center, and traveling movement sequences practiced on the floor, standing, and through studio space. Further emphasis on body awareness, spatial awareness, musicality, clarity, and quality of movement. Utilize the body as an expressive instrument. Build biomechanical, aesthetic, and historical foundations for further contemporary dance training. May be repeated up to four times for credit.

Lecture 00 hours. Laboratory 04 hours.

Prerequisite(s): DANC-2530 Contemporary/Modern Dance II, or departmental approval.

DANC-2730 Teaching Dance**03 Semester Credits**

Introduction to the techniques, principles, philosophies, and methodologies of teaching dance. Covers the fundamentals of teaching dance in various settings. Recommended for individuals who have an interest in teaching dance.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): DANC-1100 Dance Appreciation, and DANC-1520 Ballet I, and DANC-1530 Contemporary/Modern Dance I; and DANC-1540 Jazz Dance I, or DANC-1401 African Dance I.

DANC-2940 Field Experience

01-03 Semester Credits

Experience in an approved work activity under supervision of worksite supervisor and faculty member or program manager. Work activity may be paid or unpaid and must be related to a student's learning or occupational objectives. Requirement for one credit is 180 hours of approved work. Students may earn up to three credits in one semester.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 12 hours per week of field experience per credit for 15 weeks. 180 hours total per credit hour.

Prerequisite(s): Departmental approval.

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): DIS-1300 Interpreting Fundamentals and departmental approval: admission to the program.

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.

Prerequisite(s): Departmental approval: admission to program.

DIS-1740 Field Experience Lab I

01 Semester Credit

First in a two-course sequence. Companion course to Field Experience I. Practical approach to sign language interpreting, in a lab setting, with emphasis on the various and unique situations that occur in the field of interpreting. Analysis of interpreting skills and ethical choices as they relate to distinct scenarios and the Registry of Interpreters for the Deaf (RID) Code of Professional Conduct.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting, and THEA-1500 Acting I; and concurrent enrollment in DIS-1940 Field Experience I; and concurrent enrollment in DIS-1971 Field Experience Seminar I.

DIS-1940 Field Experience I

01 Semester Credit

First in two-course sequence. Experience a variety of situations and concepts in actual work settings through observational and practical interpreting experiences. K-12 educational and community-based experiences required. Supervision by college-approved interpreters.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 12 hours per week for 15 weeks (180 hours total).

Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-1740 Field Experience Lab I; and concurrent enrollment in DIS-1971 Field Experience Seminar I.

DIS-1971 Field Experience Seminar I

01 Semester Credit

First in a two-course sequence. Companion seminar to Field Experience I. 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-2420 Advanced American Sign Language II, and DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-1740 Field Experience Lab I; and concurrent enrollment in DIS-1940 Field Experience I.

DIS-2300 Transliterating**02 Semester Credits**

Theoretical and practical approach to process of sign language transliterating. 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 03 hours.

Prerequisite(s): ASL-2412 Advanced 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 Registry of Interpreters for the DEAF (RID) Code of Ethics and the Educational Interpreter's Code of Conduct.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): ASL-2412 Advanced American Sign Language I, and DIS-1310 Interpreting I, and PHIL-1000 Critical Thinking.

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 DIS-1310 Interpreting I.

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-2420 Advanced American Sign Language II, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and SPCH-1010 Fundamentals of Speech Communication.

DIS-2420 Advanced Voicing**02 Semester Credits**

Advanced 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 in-depth analysis of vocabulary selection, vocal inflection, and register in multiple settings, as well as various sign systems.

Lecture 01 hour. Laboratory 03 hours.

Prerequisite(s): DIS-2410 Voicing, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and ASL-2420 Advanced American Sign Language II.

DIS-2740 Field Experience Lab II**01 Semester Credit**

Second in a two-course sequence. Companion course Field Experience II. Practical approach to advanced sign language interpreting, in a lab setting, with emphasis on the various and unique situations that occur in the field of interpreting. In-depth analysis of advanced interpreting skills and ethical choices as they relate to distinct scenarios and the Registry of Interpreters for the Deaf (RID) Code of Professional Conduct.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-2310 Interpreting II, and DIS-2320 Educational Interpreting, and DIS-2410 Voicing; and concurrent enrollment in DIS-2940 Field Experience II; and concurrent enrollment in DIS-2971 Field Experience Seminar II.

DIS-2940 Field Experience II**01 Semester Credit**

Second in two-course sequence. Experience a variety of situations and concepts in actual work settings through observational and practical interpreting experiences. K-12 educational and community-based experiences required. Supervision by college-approved interpreters.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 12 hours per week for 15 weeks (180 hours total)

Prerequisite(s): ASL-2420 Advanced American Sign Language II, and DIS-1402 American Sign Language Linguistics, and DIS-2310 Interpreting II, and DIS-2410 Voicing, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-2740 Field Experience Lab II; and concurrent enrollment in DIS-2971 Field Experience Seminar II.

DIS-2971 Field Experience Seminar II

01 Semester Credit

Capstone course in Deaf Interpretive Services, and companion seminar to Field Experience 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-2420 Advanced American Sign Language II, and DIS-2300 Transliterating, and DIS-2310 Interpreting II, and DIS-2410 Voicing, and DIS-2320 Educational Interpreting; and concurrent enrollment in DIS-2740 Field Experience Lab II; and concurrent enrollment in DIS-2940 Field Experience II.

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 Credit

Reinforcement of first term clinical skills with an emphasis on radiographic technique, principles of instrumentation and patient assessment.

Lecture 00 hours. 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-1341 Foundational Principles of Dental Hygiene Practice

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. Discussion and application of required policies and procedures related to the health and safety of the dental hygienist and patient.

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 preventive 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 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.

DENT-2340 Community Oral Health I
01 Semester Credit

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 Credit

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. Preparation for entry into the dental hygiene profession. Topics include seeking and preparing for employment, obtaining a dental hygiene license, legal and ethical concerns of dental hygiene practice, aspects of practice management and planning for the future.
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): MATH-0965 Intermediate Algebra or appropriate score on Math Placement Test to enroll in MATH-1530 College Algebra, and eligibility for ENG-1010 College Composition I.

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): DMS-1401 Abdominal Sonography I, or DMS-1500 Gynecologic and Obstetrical Sonography; or DMS-1602 Echocardiography I, or DMS-1701 Vascular Sonography I, and MA-1010 Introduction to Medical Terminology or concurrent enrollment or MA-1020 Medical Terminology I or concurrent enrollment or departmental approval: admission to Diagnostic Medical Sonography program.

DMS-1320 Introduction to Sonographic Scanning

01 Semester Credit

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 abdomen, peritoneal and retroperitoneal cavity including potential spaces, non-cardiac chest, liver, gallbladder, pancreas, urinary system, gastrointestinal system, and abdominal vasculature as visualized by ultrasound. Doppler and color Doppler applications for the liver, gallbladder, pancreas, urinary system, gastrointestinal system, portal system, and great vessels. Correlation to other imaging modalities.

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. Includes demonstration of transabdominal examination.

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 Credit

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-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-1010 Introduction to Medical Terminology, or 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 Credit

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. Sonographer's 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-2760 Transcranial Doppler Sonography

01 Semester Credit

Specialized advance study of intracranial circulation using Transcranial Doppler (TCD) and Transcranial Duplex Imaging (TCI). Focus on anatomy, pathology, applications of TCD/TCI, sonographic scanning technique and interpretation of TCD and TCI.

Lecture .5 hour. Laboratory 1.5 hours.

Prerequisite(s): DMS-2301 Intermediate Sonographic Scanning or concurrent enrollment.

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 Credit

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 Credit

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): DMS-2301 Intermediate Sonographic Scanning.

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-235A Sonographic Principles, Performance, and Safety or concurrent enrollment; and DMS-235B Doppler Principles and Instrumentation or concurrent enrollment, or DMS-2350 Sonographic Instruments and Physics or concurrent enrollment.

DMS-2991 Sonography Capstone
01 Semester Credit

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**

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-1100 Mathematical Explorations 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): MATH-0955 Beginning Algebra or appropriate Math Placement Score.

DIET-1590 Purchasing Procedures**01 Semester Credit**

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): MATH-0955 Beginning Algebra or appropriate math placement test score to enroll in 1000-level Mathematics.

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; or DIET-1331 Fundamentals of Food Production.

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

The study of special nutritional needs, physiology, and health concerns during preconception, pregnancy, lactation, and infancy. Examine evidence-based practices and nutrition tools, promotion of health, and nutrition intervention to reduce risk of nutrition-related concerns during each of the life cycle phases.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Eligibility for ENG-1010 College Composition I.

DIET-2420 Life Cycle Nutrition - Nutrition for Children 01 Semester Credit

The study of special nutritional needs, physiology, and nutrition related health concerns: the toddler years through adolescence. Examine evidence based practices and nutrition tools, promotion of health, and nutrition intervention to reduce risk of nutrition-related concerns.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): None.

DIET-2430 Life Cycle Nutrition - Nutrition through Adulthood

01 Semester Credit

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-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.

(112 hours total)

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. Planning, implementing, and evaluating developmentally appropriate multicultural materials and experiences for language discovery and learning. Selection and integration of appropriate inclusive literature in early childhood settings. Students participate in lecture/lab setting learning how to listen, talk and read to young children. Five hours of Service Learning required.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ECED-1010 Introduction to Early Childhood Education: Children's Development and Programs.

Early Childhood Education

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.

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-2300 Child Behavior and Guidance

03 Semester Credits

Examination of positive strategies to guide young children, based on developmentally appropriate practices. Emphasis on preparing, organizing and maintaining physically and psychologically safe environments that support children's pro-social behavior. Course study includes appropriate behavioral expectations based on child development, strategies for supporting children's social and emotional development and the consequences of stress and trauma on child development and behavior. Skills strengthened include observing and assessing child behavior. Observations in a childcare center required.

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. Observations in early childhood education settings.

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 Credit

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 hours. 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 Credit

[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 (1 of 2 courses, 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 (2 of 2 courses, 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 (1 of 2 courses, 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 (2 of 2 courses, 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-0955 Beginning Algebra or appropriate score on Math Placement Test to enroll in a 1000-level Mathematics course.

OAN 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-0955 Beginning Algebra or appropriate score on Math placement test to enroll in a 1000-level Mathematics course.

OAN 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.
OAN Approved: OED001; CTAN Approved: CTED001

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.

OAN Approved: OED002

EDUC-1411 Individuals with Exceptionalities

03 Semester Credits

Survey course covering the identification, developmental characteristics, and intervention strategies for exceptional children and youth across education and community settings. Attitudes toward exceptional students, parenting exceptional children, and public laws and policies will be defined and discussed. Five hours of service learning in a special education setting required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): EDUC-1011 Introduction to Education.

OAN 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 the field of personal computer maintenance and repair. Overview of hardware and software components associated with personal computer systems. Survey of techniques and methods used by technicians to maintain, repair, troubleshoot and upgrade personal computers. Coverage of both interpersonal as well as technical abilities necessary for success in this industry. Survey of the history and evolution of the personal computer.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): IT-1010 Introduction to Microcomputer Applications, or concurrent enrollment.

CTAN Approved: CTIT003

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-1100 Mathematical Explorations 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 hours. Laboratory 04 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment, and MATH-0955 Beginning Algebra or appropriate Math placement score; 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-1161 Direct Current Circuits**03 Semester Credits**

Introduction to Direct Current circuits that includes engineering notation, the meaning of voltage, current, resistance (including color code), electrical units, power dissipation, the American Wire Gauge (AWG) table, Ohms law, Kirchoff's Voltage Law (KVL), Kirchoff's Current Law

(KCL), series circuits, parallel circuits, series/parallel circuits, component troubleshooting, resistance capacitance (RC) and resistance inductance (RL) circuits (charge, discharge and time constants). Circuit theorems include Thevenin and Norton equivalent circuits, mesh and nodal analysis.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-0965 Intermediate Algebra or MATH-1530 College Algebra or concurrent enrollment; or MATH-153H Honors College Algebra or concurrent enrollment; or departmental approval.

OAN Approved: OET001; CTAN Approved: CTEET003

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-1190 Printed Circuit Layout**02 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 01 hour. Laboratory 02 hours.

Prerequisite(s): EET-1161 Direct Current Circuits or concurrent enrollment.

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 Kirchoff'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-1161 Direct Current Circuits, and MATH-1530 College Algebra or concurrent enrollment; or MATH-153H Honors College Algebra or concurrent enrollment; or departmental approval.

OAN Approved: OET003

EET-1220 Circuits and Electronics

03 Semester Credits

An introductory course to practical electricity that involves Direct-Current (DC) and Alternating-Current (AC) circuit fundamentals and supporting topics. An emphasis is placed on practical applications found in residential and commercial locations. Additionally motors, transformer, lighting, high voltage and low voltage circuits are included with emphasis on safety.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1530 College Algebra or concurrent enrollment; or MATH-153H Honors College Algebra or concurrent enrollment; or departmental approval.

EET-1241 Digital Fundamentals

03 Semester Credits

Introductory course to digital circuits. Logic and arithmetic operations are studied, designed and tested in a laboratory environment using discrete integrated circuit gates and programmable logic devices (PLD). Base 2 (binary) and base 16 (hexadecimal) number systems are used in conjunction with Boolean algebra and other theorems. Foundation for continued study of microprocessors/microcontrollers.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1161 Direct Current Circuits, 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.

CTAN Approved: CTIT007

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.

CTAN Approved: CTIT008

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): EET-1161 Direct Current Circuits, or concurrent enrollment and departmental approval: admission to the 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 on site (300 hours per semester).

Prerequisite(s): EET-1910 Directed Practice Electric Utility Technology I, and EET-1210 AC Electric Circuits, or concurrent enrollment or departmental approval.

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-1540 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-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-1540 Trigonometry; or MATH-154H 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-2242 C and ASM Programming with Embedded Applications

03 Semester Credits

Introduces microprocessor and microcontroller internal and external hardware components. Assembly language (ASM) programming is introduced to illustrate the internal working of a microcontroller. The C programming language is taught in a regular and embedded environment that comprises most of the course.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1241 Digital Fundamentals, 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-2242 C and ASM Programming with Embedded Applications, 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.

CTAN Approved: CTIT009

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.

CTAN Approved: CTIT010

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 are provided with a 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-1241 Digital Fundamentals, or departmental approval.

CTAN Approved: CTEET003

EET-2530 Unmanned Aerial Vehicles**03 Semester Credits**

Addresses the emerging market for unmanned aerial vehicle (drones), their ethical use, safety issues, legal issues, electrical and mechanical components, on-board control systems, software and remote control.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): EET-1100 Introduction to Robotics, or EET-1150 Basic Robotics with Math, or EET-2242 C and ASM Programming with Embedded Applications or concurrent enrollment, 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 hours. Laboratory 04 hours.

Prerequisite(s): EET-1180 Surface Mount Soldering, and EET-1241 Digital Fundamentals, 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 Electric 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.

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 Electric 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 Electric Utility Technology III.

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, and basic medical terminology.

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 MATH-0910 or appropriate score on Math placement test to enroll in MATH-0955, and departmental approval: admission to the program.

EMT-130L EMT Basic Practical Lab

01 Semester Credit

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.

OAN Approved: CTFPIC02; CTFPII03

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.

OAN Approved: CTFPII03

EMT-1401 Anatomy and Physiology for Paramedics

04 Semester Credits

Basic structure and function of body systems and diseases of these systems to provide a foundation for EMT and paramedic certification.

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-1401 Anatomy and Physiology for Paramedics; 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 Credit**

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-1001 Intensive College Reading & Writing**03 Semester Credits**

Course provides support for students enrolled in ENG-1010 College Composition I through intensive instruction in academic writing, reading skills, study skills, grammar, mechanics, and test-taking strategies.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Appropriate placement test score, and concurrent enrollment in ENG-1010 College Composition I, 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-1321 English as a Second Language: Reading and Writing III, and ESL-1331 English as a Second Language: Speaking and Listening III; or departmental approval.

OAN Approved: TME001

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: OAH053

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.

OAN Approved: OAH054

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: OAH055

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: OAH056

ENG-2410 Introduction to Literature: Poetry**03 Semester Credits**

Critical analysis of selected works of poetry, designed to develop understanding and appreciation of poem 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 1940.

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 1940 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 is on writers from the non-Western world. Some works of Western authors may be 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.

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

Study of the Bible as an anthology of ancient Near Eastern literature, focusing on Old Testament narratives, history, prophecy, poetry, and wisdom literature, and New Testament letters, gospels, and apocalyptic literature. Emphasis on the original cultural and historical contexts of the literature as well as Biblical texts that have been influential in literature, art, and popular culture.

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

Analyze various interrelated film and literary texts. Examine film and literature as distinct but related media forms, explore thematic relationships between specific films and works of literature, and analyze filmic adaptations of literature.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1020 College Composition II or ENG-102H Honors College Composition II.

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.

ESL-1510 English as a Second Language: Accelerated Grammar II
06 Semester Credits

Accelerated English for non-native speakers.

Understanding and application of intermediate to advanced grammar structures of American English and practice in producing them. Focus on form, meaning, and use in oral and written communication.

Lecture 05 hours. Laboratory 02 hours.

Prerequisite(s): ESL departmental approval.

ESL-1520 English as a Second Language: Accelerated Writing II
03 Semester Credits

Accelerated English for non-native speakers. Intermediate to high intermediate and advanced ESL writing. Writing skills and strategies to prepare students for academic courses with an emphasis on increased comprehension and written communicative skills.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ESL departmental approval.

ESL-1530 English as a Second Language: Accelerated Speaking & Listening II
04 Semester Credits

Accelerated English for non-native speakers. Intermediate to high-intermediate speaking, listening, and note-taking skills. Strategies and practice in oral skills to build fluency, in aural skills to increase comprehension, and in note-taking skills to increase speed and organizational skills.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): ESL departmental approval.

ESL-1540 English as a Second Language: Accelerated Reading II
03 Semester Credits

Accelerated English for non-native speakers. Intermediate to high intermediate and advanced reading and ESL writing. Reading Skills and strategies to prepare students for academic courses with an emphasis on increased comprehension in reading skills.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ESL 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, integrating financial analysis and planning, working capital management, capital budgeting, capital structure, dividend policy, financial markets, and financial instruments into business decisions and reporting.

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.

CTAN Approved: CTFFI002/CTFFII003

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.

CTAN Approved: CTFFII003

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): Successful completion of Fire Academy

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): Successful completion of Fire Academy.

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.

CTAN Approved: CTFFII003

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.

CTAN Approved: CTFFII003

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): Successful completion of Fire Academy.

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): Successful Completion of Fire Academy.

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): Successful completion of Fire Academy.

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 Credit**

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 Fire Academy.

FRENCH - FREN**FREN-1010 Beginning French I****04 Semester Credits**

Introduction to French language skills needed in order to visit or study in a French-speaking location. Concentrates on the study of functional French, with emphasis on providing and obtaining personal information, expressing feelings and emotions, and exchanging opinions. Includes basic French grammatical structures, vocabulary, and various cultural aspects of the French-speaking world.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

OAN Approved: OFL001

FREN-1020 Beginning French II**04 Semester Credits**

Continued study of French language skills needed in order to visit or study in a French-speaking location.

Concentrates on the study of functional French, with emphasis on oral (listening-speaking) and written (reading-writing) communication situations and cultural contexts. Additional grammar review and vocabulary building. Discussion of various cultural aspects of the French-speaking world.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): FREN-1010 Beginning French I, or one year of high school French; or departmental approval.

OAN Approved: OFL002

FREN-1040 Study Abroad in Quebec- Beginner Level**04 Semester Credits**

Introductory course focused on the study of functional French, with an emphasis on speaking, reading, writing, and understanding oral and written French in various situations and texts. Designed to enhance students' knowledge and appreciation of French Canadian language, culture, political issues, and business world. Five-week program begins with four 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**

Continued study of functional French, with an emphasis on increased understanding and utilization of oral and written expression, as it relates to the situations encountered when traveling abroad. Review of basic French grammatical structures and vocabulary with additional study of more complex grammatical elements and lexical terms. Continued study of various cultural aspects of the French-speaking world.

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**

Second part of intermediate-level course focused on teaching language skills needed to visit or live in a French-speaking location for an extended time. Concentrated study of functional spoken and written French with emphasis on understanding and expression. Review of basic grammatical structures, vocabulary with additional use of complex grammatical elements and more detailed lexical terms and culture.

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**

Intermediate course concentrated on the continued study of functional French, with an emphasis on oral and written French in various situations and texts. Aimed at enhancing knowledge and appreciation of French Canadian culture, politics, and business. Includes orientation sessions in preparation for 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**

Intermediate course based upon the first half of a French novel. Concentrates on the study of functional French, with an emphasis on speaking, writing, and understanding oral and written French in various situations and texts. Review of basic and complex French grammatical structures. Additional development of vocabulary skills in the French language and knowledge of cultural aspects related to the French-speaking world.

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**

Intermediate course based upon the second half of a French novel. Continued concentration on the study of functional French with an emphasis on speaking, writing, and understanding oral and written French in various situations and texts. Review of basic and complex French grammatical structures. Additional development of vocabulary skills in the French language as well as knowledge of cultural aspects related to the French-speaking world.

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**

Exploration of personality, interests, skills, and values through a series of self-assessment inventories based on career theory. Emphasis on the nature and meaning of work in relation to life and career satisfaction.

Occupational resources analyzed and discussed.

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.

GEN-1070 First Year Success Seminar**01 Semester Credit**

Introduction to Cuyahoga Community College community, resources, and skills necessary for student success. Topics include personal responsibility, motivation, student support services, career and academic planning, time management, study skills, and financial literacy.

Lecture 01 hour. 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.

CTAN Approved: CTBPO

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-1010 Introduction to Medical Terminology 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): ENG-1010 College Composition I; and MA-1010 Introduction to Medical Terminology, or MA-1020 Medical Terminology 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): BIO-2341 Anatomy and Physiology II, and HIM-1301 Introduction to Health Information Management or departmental approval: Program manager approval.

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-2500 Introduction to Cancer Registry and Disease Management

02 Semester Credits

Introduction to the organization of the Cancer Registry, including cancer data management and utilization, quality control activities and the cancer program and accreditation processes. The function of the cancer registry in the electronic environment including Health Information Privacy and Security.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval: admission to program. Requires a minimum of an Associate Degree in a health care field that includes two semesters of Anatomy and Physiology, one semester of Pathophysiology, and one semester of Medical Terminology. If the degree does not include these courses, the courses will need to be taken prior to acceptance of the student.

HIM-2510 The Cancer Disease Process and Management

03 Semester Credits

Introduction to the Pathophysiology of the cancer disease process. Ascertainment of presenting symptomatology, diagnostic evaluations, extent of disease, evaluations and treatment modalities to include surgery, chemotherapy, radiation therapy, hormonal therapy, immunotherapy, palliative therapies, and alternative therapies.

Introduction to the role of clinical research trials in development of cancer treatments.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

HIM-2520 Oncology Coding and Staging

03 Semester Credits

Explanation of oncology coding methodologies and cancer staging systems. Students will use a variety of resources to accurately assign correct oncology codes for topography, histology, grade, tumor status, nodal status, metastatic status, stage group and summary state. Students will use a variety of cancer staging resources to determine the stage of the disease for reporting purposes. This course will provide an overview of cancer and the natural course of the disease progression.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2600 Pathophysiology; and concurrent enrollment in HIM-2510 The Cancer Disease Process and Management, and departmental approval: admission to program acceptance into Cancer Registrar Post Degree Certificate Program.

HIM-2530 Oncology Treatment and Coding **03 Semester Credits**

Covers treatment and management of cancerous diseases. Includes identification and coding of surgical treatments, radiation treatments, chemotherapy treatments, immunotherapy treatments, hormonal treatments, alternative, palliative and experimental treatments, and other treatment coding. Clinical Trials with coding and monitoring also discussed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): BIO-2600 Pathophysiology, and departmental approval: admission to program admission to Cancer Registrar Post-Degree Certificate program.

HIM-2540 Abstracting Principles and Methodologies for Oncology

03 Semester Credits

Covers the components and organization of a cancer patient health record. This course provides both general and specific instructions for abstracting pertinent information from: the patient record; and source documents using sample operative and pathologic reports. Instruction includes details on what should be recorded and how to record cancer information on the cancer registry abstract, study of the structure and content of source documents from the record, as well as abstracting principles and practices using patient health records. Normal methods and procedures used to diagnose cancer also discussed.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HIM-2530 Oncology Treatment and Coding; or departmental approval.

HIM-2550 Database Analytics, Quality and Tracking

03 Semester Credits

Policies and procedures for Cancer Program Standards including the patient follow-up process. Managing follow-up files, data quality, and database management. Gathering, manipulating, storing, retrieving and classifying recorded information. Monitoring statistics and epidemiology factors.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HIM-2500 Introduction to Cancer Registry and Disease Management; or departmental approval.

HIM-2560 Oncology Databases and Manuals

03 Semester Credits

Investigating and exploring the coding rules in the Multiple Primary Histology (MP/H) Manual and the Hematopoietic database. The course will also provide study in hematopoietic and lymphoid neoplasms.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HIM-2500 Introduction to Cancer Registry and Disease Management.

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: 1 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.

HIM-2870 Clinical Professional Practice Experience for Cancer Registry

02 Semester Credits

Direct clinical practice and observation at a Cancer Registry location that will include: Data collection and abstracting using ICD-0-3 coding; Staging cancer (CS, AJCC TNM, SEER Summary); treatments; case follow-up; Cancer Committee activities; reporting; quality control and management studies; Case-finding; Cancer Conference; HIPAA; Central Registry Operations; and Electronic Health Record exposure.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Clinical Practice hours: minimum 160 clock hours at a clinical site that is an approved Cancer Registry.

Prerequisite(s): HIM-2560 Oncology Databases and Manuals, and departmental approval: admission to program.

HEALTH TECHNOLOGY - HTEC

HTEC-1000 Introduction to Patient Care

01 Semester Credit

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 01 hour. Laboratory 02 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 MATH-0955 Beginning Algebra, or appropriate score on Math placement test to allow enrollment in MATH-1240 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

Acquaint students with 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.

CTAN Approved: CTMAT011 (1 of 3 courses)

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.

CTAN Approved: CTCF002

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.

CTAN Approved: CTCF001

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): MATH-0955 Beginning Algebra or appropriate Math placement score, and eligibility for ENG-1010 College Composition I, and HOSP-1020 Sanitation and Safety or concurrent enrollment; or departmental approval: industry experience.

CTAN Approved: CTCF003

HOSP-1040 Customer Service

02 Semester Credits

Theories and principles of guest service in hospitality industry. Discussions of basic skills and competencies needed in entry level hospitality service positions as recommended by the National Restaurant Association and 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): MATH-0910 Basic Arithmetic and Pre-Algebra, or appropriate score on Math placement test to enroll in MATH-0955, 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): MATH-0955 Beginning Algebra or appropriate score of Math placement test; 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, and MATH-0955 Beginning Algebra or appropriate Math placement score.

HOSP-1481 Housekeeping and Facilities Management

03 Semester Credits

Fundamentals of professional housekeeping services in lodging industry, and basic knowledge of maintenance and engineering departments. Examines basic cleaning methods and equipment currently used; work production and quality control techniques specific to housekeeping management. Includes survey of building systems, facility layout, and equipment.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry, and HOSP-1020 Sanitation and Safety or concurrent enrollment; and concurrent enrollment in HOSP-1580 Front Office Operations.

HOSP-1540 Lodging Operations Lab

01 Semester Credit

On-site observation and computer based training at local hotels provide practical application of lodging establishment functions in the areas of housekeeping, laundry, and maintenance. Field trips required.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): HOSP-1010 Introduction to the Hospitality Industry; and concurrent enrollment in HOSP-1481 Housekeeping and Facilities Management; and concurrent enrollment in HOSP-1580 Front Office Operations.

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): HOSP-1020 Sanitation and Safety or concurrent enrollment; and concurrent enrollment in HOSP-1031 Fundamentals of Culinary Arts and MATH-0955 Beginning Algebra or appropriate score on Math placement test; and eligibility for ENG-1010 College Composition I.

HOSP-1580 Front Office Operations

02 Semester Credits

Elements of effective front office management, focusing on planning and evaluation of front office operations and 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 required.

Lecture 02 hours. Laboratory 00 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, and HOSP-1031 Fundamentals of Culinary Arts; and eligible for MATH-0955 Beginning Algebra; 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.

CTAN Approved: CTCF004

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-2330 Menus and Facilities Planning & Design

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 menu development, pricing, layout and evaluation to facilities design and layout to provide for profitability. Computer generated menus and facilities layout. Planning and evaluation of facilities and selection of appropriate equipment. Field trips may be required.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): HOSP-1451 Contemporary Cuisine, HOSP-2500 Hospitality Cost Control or concurrent enrollment, HOSP-2700 Hospitality Purchasing or concurrent enrollment.

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-2862 Lodging and Tourism Management Experience

01 Semester Credit

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. Student portfolios reviewed by industry professionals with emphasis on preparedness as career professional.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 14 hours per week for 15 weeks.

Prerequisite(s): HOSP-1960 Lodging/Tourism Field Experience, and HOSP-2400 Hospitality Management and Supervision or concurrent enrollment, and departmental approval: approved work site and completion of 3 Career Center seminars as designated by the Hospitality department.

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 hours. 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-1101 Foundations of Substance Abuse, Addiction, and Group Work

04 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. Also includes investigation of group work theories, different types of groups, group dynamics, stages of group process, group facilitation, participant role/influences, and group counseling techniques.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment.

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 exploration of psychological, social and cultural lifestyle aspects and chemical dependency as applied to multicultural and special populations. Examination of various methods of intervention, assessment, treatment, group therapy, counseling techniques, case management, referral, and community resources for practitioners to help people maintain sobriety. Review of 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-1101 Foundations of Substance Abuse, Addiction, and Group Work.

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-1101 Foundations of Substance Abuse, Addiction, and Group Work.

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. Exploration of careers in the field of Human Services. Emphasis on understanding Human Services within context of culturally/ethnically diverse urban environment.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I or concurrent enrollment, or ENG-101H Honors College Composition I or concurrent enrollment.

HS-1850 Introduction to Human Services Principles and Practices

05 Semester Credits

Principles and practices of Solution Focused/Brief Therapy Theory and Motivational Interviewing. Development of behavioral observation, assessment, intervention and assertiveness skills. Emphasis on developing cooperative relationships with clients, practicum supervisor, instructor and peers. Introduction to community services and managed care system. Demonstrate application of appropriate, ethical and culturally sensitive interventions at practicum site. Supervised practicum of seven hours per week with emphasis on orientation, data collection, behavioral 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, and departmental approval: required background check must be completed at least three months prior to the first day of class.

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-1101 Foundations of Substance Abuse, Addiction, and Group Work.

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-1101 Foundations of Substance Abuse, Addiction, and Group Work, 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-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**

Introduction to the basic skills of time management. Application of time management techniques to student's personal schedule. Investigation of therapeutic theories of laughter and playfulness. Continue developing skills and application of Motivational Therapy. Introduction into the theory and application of Cognitive Therapy and Non-Traditional Therapies. Research of a specific Adjunct Therapy. Development of preventive measures in human services.

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 departmental 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; CTAN Approved: CTIT001

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 MATH-0955 Beginning Algebra or appropriate score on Math placement test, 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, effective search strategies, e-mail, social media, newsgroups, copyright issues, library resources, citation styles, multimedia resources, cloud computing, 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 Websites 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-1150 Introduction to Web Programming

03 Semester Credits

Build Web pages using current technologies including but not limited to HTML, Cascading Style Sheets and JavaScript using an HTML editor. Focus is on developing a foundation in web programming.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1025 Information Technology Concepts for Programmers or concurrent enrollment.

IT-2030 ASP.NET Web Programming

04 Semester Credits

Capstone course for Programming and Development majors. Advanced server-side programming course. Create server-side, database-driven websites using the ASP.NET framework in combination with markup, style sheets and client-side scripting.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1150 Introduction to Web Programming, and IT-2351 Enterprise Database Systems, and IT-2650 Java Programming.

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-2650 Java Programming.

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): IT-2650 Java Programming.

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.

CTAN Approved: CIIT002

IT-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 IT-1150 Introduction to Web Programming.

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 MATH-0955 Beginning Algebra or appropriate score on Math placement test.

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-2510 Project Management Software

03 Semester Credits

Provides an overview of project management concepts and hands-on activities in a project management software application. Utilize a business scenario in order to learn knowledge and skills relating to project scheduling, calendars, tasks, phases, resources, charting, and reporting.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): BADM-1020 Introduction to Business, IT-1010 Introduction to Microcomputer Applications or IT-101H Honors Introduction to Microcomputer Applications; or departmental approval.

IT-2600 E-Business Programming Technologies

03 Semester Credits

Use of web programming technologies to create Internet client/server applications. Design, create, code and debug applications using Web objects. Topics include, but are not limited to, SQL, XML, C# .Net, Visual Basic .Net, and a server-side technology such as PHP.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): IT-1150 Introduction to Web Programming, and IT-2351 Enterprise Database Systems; and IT-2650 Java Programming, or IT-2620 Visual Basic .NET Programming, or IT-2670 C/C++ Programming Language, or IT-2680 Visual C# .NET.

IT-2620 Visual Basic .NET Programming

04 Semester Credits

Introduction to object-oriented programming in a Windows environment using the Visual Basic programming language and .NET framework. 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.

IT-2650 Java Programming

04 Semester Credits

Introduction to object-oriented methodologies and programming using the Java programming language. Design, code, and debug Java applications. Other topics include GUI components, event handling, and exception handling.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): IT-1050 Programming Logic.

IT-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): IT-2650 Java Programming.

IT-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.

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-2680 Visual C# .NET

04 Semester Credits

An introduction to object-oriented programming using the Visual C# .NET programming language. Design, code and debug Visual C# .NET applications and objects. Topics include, but not limited to, using methods, creating and using classes, GUI components, the Visual Studio IDE, event handling, using controls and exception handling.

Lecture 03 hours. Laboratory 02 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 -
(Programming and Development) -
ITMP/ITWM**

All courses formerly listed under ITMP/ITWM have been moved under IT. See page 378.

**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): IT-1025 Information Technology Concepts for Programmers, or concurrent enrollment or departmental approval, or EET-1241 Digital Fundamentals, or concurrent enrollment.

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.

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

Introduction to knowledge and skills necessary to perform installation, configuration, and day-to-day administration tasks in a Microsoft Windows-based network. Includes how to install the server operating system, manage local and remote access, manage file and printer services, implement group policies, and manage server storage. How to install and configure Active Directory (AD), Domain Name System (DNS) server, Dynamic Host Configuration Protocol (DHCP), and networking services are also covered.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): ITNT-2300 Networking Fundamentals or concurrent enrollment, or departmental approval: equivalent knowledge or skills.

CTAN Approved: CTIT013

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.

CTAN Approved: CTITN005

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

Introduction to knowledge and skills necessary to manage and maintain the core infrastructure required for a Windows Server environment. Includes how to manage domain users and groups, how to control network access, and how to implement data security.

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.

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): MATH-0910 or appropriate score on Math placement test to enroll in MATH-0955.

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, Kirchoff's voltage and current laws will also be covered.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1240 Contemporary Mathematics or concurrent enrollment.

**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, Kirchoff'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.

**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 (STICK)
04 Semester Credits**

Develop skills in Shielded Metal Welding (STICK). Extensive guided instruction provided and prepares a student for the certified STICK 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-2140 Non-Destructive Testing

03 Semester Credits

An introduction to terms, definitions, methods, and applications of the non-destructive testing profession and an in-depth exploration of two methods of non-destructive testing: visual inspection and liquid penetrant examination. The tools, proper processing techniques, different testing methods, and interpretation involved with visual inspection and liquid penetrant testing will be discussed and practiced.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): None.

ISET-2150 Robotic Welding

03 Semester Credits

Concepts and fundamental skills associated with the operation and programming of robotic welding machines. Topics include safe operation of robotic welding machines; building and editing programs to complete simple and complex welds; welding variables and options; and machine maintenance and setup.

Lecture 01 hour. Laboratory 04 hours.

Prerequisite(s): ISET-2100 Gas Metal Arc Welding (MIG).

ISET-2160 Structural Fabrication

04 Semester Credits

Complete a fabrication project, beginning by interpreting a set of prints, developing a plan, and working to cut, prepare, fit and weld raw materials together. The fabrication project will resemble a real world scenario related to the shipbuilding, construction, aeronautical, or related industries on a smaller scale.

Lecture 02 hours. Laboratory 04 hours.

Prerequisite(s): ISET-1100 Welding Blue Print Reading, and ISET-2100 Gas Metal Arc Welding (MIG).

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 appropriate score on Math Placement test to enroll in MATH-0955 Beginning Algebra.

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, and MATH 1000-level 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, and MATH-1000 level course or higher.

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 Credit**

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 hours. 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, or concurrent enrollment, ART-1091 Color Theory and Application, or concurrent enrollment, INTD-1111 Introduction to Interior Design, INTD-1120 Architectural Drafting for Interiors I, INTD-1130 Architectural Drafting for Interiors II, INTD-2380 Fundamentals of Lighting, INTD-2430 Architectural Materials and Methods, and 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): INTD-1111 Introduction to Interior Design and 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 production, estimating, sources and showrooms. Criteria for specifying materials and finishes of interior spaces using Construction Specifications Institute (CSI) MasterFormat specifications and Furniture, Finishes and Equipment (FF&E) specifications.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): INTD-1111 Introduction to Interior Design and INTD-1100 Hand Drafting and Sketching for Interiors and MATH-0955 Beginning Algebra, or appropriate score on Math placement test to enroll in 1000-level Mathematics or higher.

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-2471 Professional Practice of Interior Design**02 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 02 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 Credit**

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 hours. 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-2471 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 all 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): 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.

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.

MESSAGE 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 indications 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-0955 Beginning Algebra or appropriate Math placement test to enroll in 1000-level 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-0955 Beginning Algebra or appropriate Math placement test to enroll in 1000-level 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-0955 Beginning Algebra or appropriate Math placement test to enroll in 1000-level 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. Basic business communication and massage office policies, procedures, and practices. 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. Basic business communication and massage office policies, procedures, and practices. 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 Credit

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. Basic business communication and massage office policies, procedures, and practices. 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, business communication, and massage office policies, procedures and practices.

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, business communication, and massage office policies, procedures and practices. 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 Credit

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, business communication and massage office policies, procedures and practices. 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 Credit

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, business communication and massage office policies, procedures, and practices.
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-2380 Advanced Massage Therapy Clinic 03 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. Review of complementary modalities including hot stone massage, aromatherapy, and reflexology. Advancing skills in business communication and office management in a clinical setting.
Lecture 00 hours. Laboratory 09 hours.
Prerequisite(s): MT-1321 Functional Assessment in Massage Therapy, and MT-2200 Medical Massage, and MT-2311 Advanced Massage Therapy or concurrent enrollment; 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-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-0855 Mastering Math 0955
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-0955 Beginning Algebra.

**MATH-0910 Basic Arithmetic and Pre-Algebra
03 Semester Credits**

Includes real numbers (integers, fractions, signed fractions, and signed decimals) and operations (addition, subtraction, multiplication and division) along with the use of order of operations, ratio, rates, proportion, percent, English system of measurement, introduction to basic algebra and solving basic algebraic equations, and

perimeter and area of basic geometric shapes. Includes applications and activities to build skills in estimation and problem solving. Students may only take MATH-0910 once. If a student fails or withdraws, it cannot be repeated.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Sufficient score on assessment test, or departmental approval.

**MATH-0955 Beginning Algebra
06 Semester Credits**

Topics include solving one variable linear equations, literal equations, linear inequalities in one variable, graphing linear inequalities in one variable, compound inequalities, graphing compound inequalities, determining relation, domain, range of functions graphically and algebraically, performing operations on functions, introducing the rectangular coordinate system, determining equations of lines, graphing lines and two variable inequalities, solving systems of two variable equations and inequalities, performing algebraic operations and simplifying of polynomials involving rules of exponents, and scientific notation. Includes applications and activities to build skills in problem solving.

Lecture 06 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0910 Basic Arithmetic and Pre-Algebra, or sufficient score on math placement test; or departmental approval.

**MATH-0965 Intermediate Algebra
06 Semester Credits**

Topics include factoring, solving equations by factoring, rational expressions, rational equations, systems of three linear equations in three variables, radical expressions, radical equations, expressions with rational exponents, equations with rational exponents, quadratic equations involving the Zero Product Property, Square Root Property, Completing the Square, and the Quadratic Formula, graphing quadratic functions, exponential expressions, and graphing exponential functions. Includes applications and activities to build skills in problem solving.

Lecture 06 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0955 Beginning Algebra, or sufficient score on math 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-1100 Mathematical Explorations

03 Semester Credits

Survey of mathematical topics. Introduction to basic concepts of problem solving, set theory, logic, number theory, and college geometry.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0955 Beginning Algebra; or MATH-0990 Math Literacy for College Students; or sufficient score on assessment test; or departmental approval: equivalent coursework.

WAN Approved: TMMSL

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-0955 Beginning Algebra I, or MATH-0990 Math Literacy for College Students; or sufficient score on placement test; or departmental approval.

MATH-1240 Contemporary Mathematics

03 Semester Credits

Applications of mathematics in contemporary life. Introduction to financial literacy, dimensional analysis as applied to measurement and unit conversions, graph theory, topics in probability and descriptive statistics.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0955 Beginning Algebra, or sufficient score on Math Placement test; or departmental approval: equivalent coursework.

WAN Approved: TMMSL

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-0965 Intermediate Algebra or sufficient score on Math Placement 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-0965 Intermediate Algebra, or MATH-1240 Contemporary Mathematics, or appropriate score on Math Placement Test; or departmental approval: equivalent coursework.

WAN Approved: OMT010

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-0965 Intermediate Algebra, or appropriate score on Math placement 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.

OAN 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 appropriate score on MATH Placement Test; or departmental approval: equivalent coursework.

OAN 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.

OAN Approved: OBU009 (2 of 2 courses)

MATH-1530 College Algebra**04 Semester Credits**

Topics include extensive function (linear, quadratic, polynomial, radical, roots, power, piece-wise, exponential, logarithmic) representation including verbal, numeric, graphic, and algebraic, identifying properties of the different function types, transformation of functions, solve linear, polynomial, rational, absolute value, exponential and logarithmic equations. Solve quadratic, polynomial and rational inequalities in one variable. Determine and graph conic sections, solve non-linear systems of equations and inequalities and solve systems of equations using matrices, arithmetic and geometric sequences and series. Includes applications and activities to build skills in problem solving.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0965 Intermediate Algebra, or appropriate score on Math placement test.

OAN Approved: TMM001

MATH-153H Honors College Algebra**04 Semester Credits**

Topics include extensive function (linear, quadratic, polynomial, radical, roots, power, piece-wise, exponential, logarithmic) representation including verbal, numeric, graphic, and algebraic, identifying properties of the different function types, transformation of functions, solve linear, polynomial, rational, absolute value, exponential and logarithmic equations. Solve quadratic, polynomial and rational inequalities in one variable. Determine and graph conic sections, solve non-linear systems of equations and inequalities and solve systems of equations using matrices, arithmetic and geometric sequences and series. Includes applications and activities to build skills in problem solving.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): MATH-0965 Intermediate Algebra or sufficient score on assessment test; or departmental approval: equivalent coursework.

MATH-1540 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-1530 College Algebra, or appropriate score on Math placement test.

MATH-154H 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-1530 College Algebra, or MATH-153H Honors College Algebra; or departmental approval.

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: TMM002

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-1540 Trigonometry, or MATH-154H Honors Trigonometry, or MATH-1580 Precalculus, or sufficient score on assessment test, or departmental approval: equivalent coursework.

UAN 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-1540 Trigonometry, or MATH-154H Honors Trigonometry, or MATH-1580 Precalculus; or departmental approval.

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; conic sections.

Lecture 05 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1610 Calculus I, or departmental approval: equivalent coursework.

UAN 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.

UAN Approved: TMM006

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-1530 College Algebra, or MATH-153H Honors College Algebra; or MATH-1580 Precalculus; or sufficient score on Math placement 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.

OAN Approved: TMM018 and OMT018

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: TMM019

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): MATH-0965 Intermediate Algebra, or appropriate Math placement score to place into MATH-1530 College Algebra.

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): MATH-0955 Beginning Algebra, or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

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-0955 Beginning Algebra, or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

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): MATH-0955 Beginning Algebra or appropriate Math placement score to place into MATH-0965 Intermediate Algebra.

OAN Approved: OET010; CTAN Approved: CTMET004

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-0955 Beginning Algebra or appropriate Math placement test to enroll in 1000-Level 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-0955 Beginning Algebra or appropriate Math placement test to enroll in 1000-Level 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): MATH-0955 Beginning Algebra, or appropriate score on Math Placement Test to enroll in MATH-0965 Intermediate Algebra.

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 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1530 College Algebra; and PHYS-1210 College 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 03 hours. Laboratory 00 hours.

Prerequisite(s): MET-1601 Technical Statics.

MET-1630 Industrial Supply Logistics
03 Semester Credits

An introduction to supply chain logistics and warehouse operations for manufacturing processes. Fundamentals of supply chains, transportation modes, inventory control, documentation required in warehouses, types of warehouse equipment, workplace safety, proper handling of material, quality control systems, inspection methods, specifications, ISO 9001, product handling, and print reading. Designed to prepare students to take the MSSC CLA examination.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MET-1100 Technology Orientation, and MATH-1530 College Algebra 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; CTAN Approved: CTMET005

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 Credit

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 hours. 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-1620 Calculus II, and PHYS-2310 General Physics I.

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-1530 College Algebra; and MET-1240 Machine Tools and Manufacturing Processes or concurrent enrollment; or departmental approval: work experience.

MET-2422 Fundamentals of Engineering Economics

03 Semester Credits

Analysis of cost elements in engineering projects and operations. Topics include: comparison of project alternatives; selecting an alternative by applying Benefit/Cost Analysis, Present Worth Method, Annual Worth Method, and Internal Rate of Return; introduction to risk analysis, accounting fundamentals, financial statements, and capital financing and allocation. Ethical and social responsibilities as applied to engineering project decisions. Practical applications of cost concepts and the application towards the different phases of manufacturing or project implementation. Use of Microsoft Excel in performing analysis.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1530 College Algebra or higher.

OAN Approved: OES005

MET-2430 Engineering Probability and Statistics

03 Semester Credits

Course covers probability and statistics for engineers.

Course topics include: measures of central tendency and dispersion, probability axioms and rules, standard discrete distributions, standard continuous distributions, point and confidence interval parametric values, central limit theorem, sampling distributions, hypothesis testing for one-sample and two-sample means and proportions, relationships between two random variables, correlation analysis, and simple linear regressions. Examples, problems, and case studies can be from manufacturing, mechanical, civil, electrical, and construction engineering.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1610 Calculus I.

OAN Approved: OES004

MET-2500 Fundamentals of Products Development and Manufacture

03 Semester Credits

This course examines the fundamentals of new product development (NPD) including: preparing for product innovation, success factors of product innovation, ideation and concept creation, customers input, market analysis, use of social media, strategies for developing products, product launches and supply chain, post launch product management, and intellectual property implications.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MET-1240 Machine Tools and Manufacturing Processes.

MET-2550 Engineering Analysis Using MATLAB

03 Semester Credits

Provide basic programming concepts and apply computational methodologies to solve engineering problems by emphasizing MATLAB interactive environment software. Particularly focused on matrix/vector computation, built-in MATLAB functions, numerical analysis, scientific and engineering graphics, m-files (source code), and introduction to visualization tools. Designed for people who may not have any previous MATLAB, computer or programming experience.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MATH-1610 Calculus I, and highly recommend concurrent enrollment in MATH 1620 Calculus II.

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-2610 Statics

03 Semester Credits

Course designed for students planning to transfer to a 4-year engineering program. Covers mechanics of forces and loads in static equilibrium. Includes fundamentals of particle statics in 2D and 3D. Emphasis on rigid bodies equivalent force systems, equilibrium of rigid bodies in 2D and 3D, centroids and centers of gravity, friction, and analysis of trusses, frames, and beams; Also covers moments of inertia and radii of gyration; and method of virtual work.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MATH-1610 Calculus I, and PHYS-2310 General Physics I or concurrent enrollment.

OAN Approved: OES002

MET-2620 Dynamics

03 Semester Credits

Covers mechanics of forces and torques and the effects on motion. Emphasis on kinematics of particles and rigid bodies, Newton's Laws of Motion, Work and Kinetic Energy, Kinetics of rigid bodies, and 3D dynamics of rigid bodies. Also includes vibration and time response.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MET-2610 Statics.

OAN Approved: OES003

MET-2630 Engineering Strength of Materials

03 Semester Credits

Course designed for students planning to transfer to a 4-year engineering program. Focused on fundamental principles and methods of solid mechanics and their applications. Topics covered include normal, shear, torsional, and thermal stress-strain analysis; generalized Hooke's law; bending moment and shear force diagrams; transformation of stress-strain and principle stresses; Mohr's circle for plane stress; state of stress in three-dimension; stress due to combined loading; deflection of beams; plane stress in thin-walled members; strain

measurements; analysis of columns; and design principles based on mechanics of solids.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MET-2610 Statics, and PHYS-2310 General Physics I.

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, or MET-2620 Dynamics; and MET-2041 CAD II & GD&T or concurrent enrollment; and MET-2200 Strength of Materials, or MET-2630 Engineering 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-1530 College Algebra or higher; 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-1530 College Algebra.

**MET-2750 Technical Operations Management
03 Semester Credits**

Introduction to the design and management of manufacturing operations. Emphasis is focused on identifying appropriate management processes and potential management models used to efficiently manage industrial resources. Various techniques and methodologies for solving industrial operations management problems will be explored including statistical models, linear programming, and Microsoft Excel.

Lecture 02 hours. Laboratory 02 hours.

Prerequisite(s): MET-2430 Engineering Probability and Statistics, or MET-2400 Statistical Quality Control.

**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-2941 Additive Manufacturing Internship
01-04 Semester Credits**

Engage in actual hands-on, on-the-job training using Additive Manufacturing technology in Additive Manufacturing with field experience. May be repeated for up to 4 credits total. Requirement for each credit hour is 180 hours of approved work.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: 12 hours a week of internship/field experience per credit (total of 180 hours per credit hour).

Prerequisite(s): MET-1230 Drawing & AutoCAD, or MET-1240 Machine Tools and Manufacturing Processes, or MET-1250 Introduction To Additive Manufacturing, or MET-1260 Product Ideation and Design, or MET-2601 3D Solid Modeling; or departmental approval.

**MEDIA ARTS AND FILMMAKING - MARS
(formerly Media Arts and Studies)**

**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-1180 Introduction to Media Arts and Filmmaking
03 Semester Credits**

Provides a technical foundation for further study and practice in the art and technology of digital filmmaking. 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, and post-production.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

OAN Approved: OCM008

**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): MARS-1180 Introduction to Media Arts and Filmmaking, or departmental approval.

**MARS-2120 Advanced Editing
03 Semester Credits**

Advanced motion media editing using industry standard, non-linear, editing software and hardware. Preparation for industry recognized certification exam in professional editing software. Builds upon concepts introduced in prerequisite coursework including the basics in motion media editing using industry standard, non-linear, editing software and hardware. 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): MARS-1180 Introduction to Media Arts and Filmmaking, and MARS-2110 Editing.

MARS-2180 Digital Cinematography**03 Semester Credits**

Focus on issues facing cinematographers, camera operators, digital imaging technicians, and others working in digital cinematography. Basic introduction to microphones and sound recording. Discussion of current options in acquisition format for digital filmmaking. Introduction to crew roles and set etiquette. Hands-on experience in using 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 and tell a story.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MARS-1180 Introduction to Media Arts and Filmmaking, and VCPH-1261 Photography I, or concurrent enrollment, or departmental approval.

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): MARS-2180 Digital Cinematography; or departmental approval.

MARS-2280 Short Films: Exploring Genre and Technique**03 Semester Credits**

Intensive, intermediate-level course in scripting, directing, and editing short films with a focus on genre. Participate in acting and directing exercises designed to evoke believable performances on screen. Editing approaches to narrative and experimental film are examined in relation to film theory and conventions of genre. Emphasis on expanding global awareness through examination of genre-specific themes, characters, and archetypes in international film. Exploration of the relationship between main-stream media production and the avant-garde. Application of practical methods of collaboration in professional filmmaking and media production.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MARS-2180 Digital Cinematography, or departmental approval.

MARS-2380 Visual Effects**03 Semester Credits**

Focus on planning, producing and editing visual effects for motion media. Digitally combine multiple motion and graphic sources to create convincing moving image composites. Emphasis on shot composition, matching lighting and color, focus, depth of field, 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): VCPH-1450 Digital Imaging I.

MARS-2480 Motion Graphics**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): VCPH-1450 Digital Imaging I, and MARS-1180 Introduction to Media Arts and Filmmaking, or departmental 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): MARS-1180 Introduction to Media Arts and Filmmaking, and MARS-1020 Story: Pre-production Methods and the Art of Story in Motion Media, or departmental approval.

MARS-2680 Digital Cinematography II**03 Semester Credits**

Focus on advanced issues facing directors of photography working in digital formats both in the studio and on location. Study of current acquisition formats for motion media productions and their limitations vs. advantages. Gain professional level competency in controlling lighting instruments and cameras, to produce desired effects for a variety of productions. Emphasis on practical use of light, color, picture composition, lens choice 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): MARS-2180 Digital Cinematography.

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-2780 Motion Graphics II

03 Semester Credits

Focus on technical proficiency in industry-standard motion graphics software application. Builds upon concepts and techniques introduced in MARS-2480 Motion Graphics.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): MARS-2480 Motion Graphics, or departmental approval.

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 Filmmaking 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 a foundation for medical word building and to help students who intend to enroll in Medical Terminology I and/or Anatomy and Physiology.

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, pronunciation, and use of a medical dictionary. 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.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

OAN Approved: OHL020

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-1402 Basic Clinical Medical Assisting
02 Semester Credits**

Discuss theory of fundamental clinical procedures in physician offices and related ambulatory care settings. Review of basic anatomy and physiology of the cardiovascular system as relate to diseases, disorders and diagnostic testing. Provide patient communication focusing on diverse populations and special needs. Theory and practice of pharmacology and pharmacology math associated with the ambulatory setting. Completion of course requires ten mandatory hours outside class time in the Preventive Care Center under supervision of faculty and staff.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): Concurrent enrollment in MA-140L Basic Clinical Medical Assisting Lab.; and MATH-1060 Survey of Mathematics; and ENG-1010 College Composition I or ENG-101H Honors College Composition I; and MA-1010 Introduction to Medical Terminology; or MA-1020 Medical Terminology I, and MA-2010 Medical Terminology II.

**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.
CTAN Approved: CTMAT004/CTMAT005*

**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.
CTAN Approved: CTMAT004/CTMT005*

**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-2110 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-241L Advanced Clinical Assisting Lab

01 Semester Credit

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-1402 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-2413 Advanced Clinical Medical Assisting.

MA-2413 Advanced Clinical Medical Assisting

03 Semester Credits

Theory necessary for the medical assistant (MA) to perform and assist with advanced procedures in the physician's office, clinic, and other ambulatory settings. Coverage of body systems in relation to specialized exams/treatments, laboratory/diagnostic.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): MA-1321 Medical Office Laboratory Procedures, and MA-132L Medical Office Laboratory Procedures, and MA-1402 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-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-2413 Advanced Clinical Medical Assisting and MA-2980 Medical Assisting Seminar.

CTAN Approved: CTMAT011 (2 of 3 courses)

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.

CTAN Approved: CTMAT011 (3 of 3 courses)

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): MATH-0955 Beginning Algebra, or appropriate score on Math placement test, and departmental approval.

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 inpatient or outpatient phlebotomy departments of local clinical sites for 26.25 hours per week (8 weeks) meeting performance objectives for laboratory phlebotomy technician.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 26.25 hours per week for 8 weeks (210 total hours).

Seminar: 2 hours per week for 8 weeks.

Prerequisite(s): 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.

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 advanced phlebotomy procedures. Presentation of basic procedures involved in point-of-care testing. Emphasis on communication, interpersonal skills, and ethical considerations relating to patients. Professional development. 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): MLT-2990 Advanced MLT Applications; and concurrent enrollment in MLT-2940 Medical Laboratory Field Experience.

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 courses, both must be taken)

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 courses, both must be taken)

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 250 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 250 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: 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): 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 8 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 (2 of 8 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 (3 of 8 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 8 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 8 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.

OAN Approved: OAH052 (6 of 8 courses, all must be taken)

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 (7 of 8 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.

OAN Approved: OAH052 (8 of 8 courses, all must be taken)

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 Credit

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 Credit

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 .5 hours. 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 hours. 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 Credit

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 hours. 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 Credit

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 hours. 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 hours. 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 hours. 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 hours. Laboratory 00 hours.

Prerequisite(s): NMED-1501 Radiation Physics, or concurrent enrollment, and NMED-1602 Nuclear Radiopharmacy and Pharmacology, or concurrent enrollment.

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 patient's pathology.

Lecture 02 hours. 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 hours. 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-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 or 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 Credit

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 hours. 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 Credit

Study the principles and practices of nuclear medicine therapies including palliation, cancer treatment, theranautics, 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 Credit

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-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.

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.

CTAN Approved: CTADNUR002

NURS-1451 Self-Care Needs: Adult Life Span**07 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 and clinical: 09 hours.

Prerequisite(s): BIO-1100 Introduction to Biological Chemistry, BIO-2331 Anatomy and Physiology I or concurrent enrollment; and ENG-1010 College Composition I, MATH-1240

Contemporary Mathematics, NURS-1300 Health Assessment or concurrent enrollment; and PSY-1010 General Psychology; and PSY-2020 Life Span Development, or concurrent enrollment; and departmental approval: admission to Nursing Program.

CTAN Approved: CTADNUR002

NURS-1601 Health Deviations I**07 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 musculoskeletal function, fluid and electrolyte balance, reproductive, and urologic disorders, surgery, diabetes, pain, HIV and oncology.

Lecture 04 hours. Laboratory: on-campus and clinical: 09 hours.

Prerequisite(s): NURS-1451 Self-Care Needs: Adult Life Span, and BIO-2341 Anatomy and Physiology II or concurrent enrollment; and BIO-2500 Microbiology, or concurrent enrollment; and departmental approval.

CTAN Approved: CTADNUR002

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-1601 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-2301 Specialized Health Care Needs**08 Semester Credits**

Critical thinking, Orem's self-care deficit theory, and the nursing process provide the framework for delivery of nursing care to the specialized populations of childbearing families, children and their families, and individuals with psychiatric-mental health needs. Emphasis is 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: Clinical: 09 hours.

Prerequisite(s): NURS-1601 Health Deviations I, or NURS-160D Health Deviations I for LPNs; and NURS-1701 Community/Home Nursing, and departmental approval.

OAN Approved: OHL012

NURS-2501 Health Deviations II

08 Semester Credits

Capstone Course in Nursing: 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. Professional issues and career planning are incorporated in the clinical component of the course.

Lecture 04 hours. Laboratory: On campus and clinical: 12 required hours.

Prerequisite(s): NURS-2301 Specialized Health Care Needs.

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. per semester.

Seminar: 15 hrs. per 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 hrs. per semester.

Seminar: 15 hrs. 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. per semester.

Seminar: 15 hrs. per 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 ophthalmic and geometric optics, modern lens theory and construction as it relates to design, fitting and dispensing of spectacles and contact lenses.

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, and 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**

Beginning principles of design, fitting, verification and dispensing of spectacles.

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, ocular terminology and the fundamentals of microbial control.

Lecture 03 hours. Laboratory 00 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-2501 Optical Business

03 Semester Credits

Covers organizations, sales, third party insurance, inventory, hiring and supervision. Interpret financial data; set sales goals; evaluate inventory control systems; attracting and retaining superior employees.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): Departmental approval.

OPT-2550 Advanced Optical Dispensing Lab

01 Semester Credit

Development of advanced dispensing techniques including troubleshooting, advanced lens design, advanced fitting theory and repair techniques.

Lecture 00 hours. Laboratory 03 hours.

Prerequisite(s): OPT-1520 Optical Dispensing II.

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-1001 Introduction to Paralegal Profession
03 Semester Credits

Introduction to the practical aspects of working within the paralegal field. Instruction includes the legal status of paralegals, ethical constraints placed upon those in the legal profession, sources of American law, an overview of the U.S. legal system, legal settings, and paralegal skills, including organizational skills and attention to detail, with particular emphasis on legal writing. Students are encouraged to begin professional development, including membership in paralegal organizations.

Lecture 03 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 the Ohio Rules of Civil Procedure. Analyze and apply rules pertaining to commencement of action, service, motion practice, discovery issues (including Federal Rules pertaining to e-Discovery), and appellate practice. 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-1001 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, in print and online, 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-1001 Introduction to Paralegal Profession.

PL-1460 Workers' Compensation Law
03 Semester Credits

[This course is cross-listed as BADM-1460. Credit can only be earned once for either course.] 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 injured worker forms and employer forms. Practice in calculating compensation for injuries, determining and preparing employer defenses, and determining and creating both injured worker and employer appeals.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): None.

PL-1502 Law Office Technology
03 Semester Credits

Designed for student already conversant with basic functions of word processing, presentation software, database management, and spreadsheet design. Student will perform advanced word processing, spreadsheet and presentation operations to create and manage legal documents and files. Focus on use of computers related to paralegal functions in timekeeping, docket control, litigation support, and case management. Activities constructed to replicate law office experiences and tasks, including E-Discovery fact-finding simulations.

Lecture 03 hours. Laboratory 00 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

Emphasizes both statutory and common laws, which govern the employment relationship. Specific attention is given to the laws that create, as well as terminate the employment relationship, documentation of employment practices, and litigation of employment-related claims, including discrimination and wrongful termination. Research involving the laws governing the rights of the employer and the employee regarding privacy in the work place. Emphasis on client interviewing as a role of the paralegal in the employment litigation process.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I.

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-1001 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-1001 Introduction to Paralegal Profession, or concurrent enrollment, and ENG-1010 College Composition I, or concurrent enrollment; or departmental approval: permission from program manager.

PL-1730 Criminal Law for Paralegals

03 Semester Credits

Introduction to the American Criminal Justice System and the role of the paralegal in that system. Criminal law and procedure will be explored along with legal documents relevant to criminal law practice.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): PL-1001 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 online, 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**

Advancement of skills learned in Basic Legal Research & Writing with advanced research assignments using Internet and computer resources for research of state and federal cases, codes, administrative regulations, factual information and secondary authorities. Assess legal problems, locate authority and law-related resources on the Internet. Utilize legal specialty Internet resources as well as LEXIS® and/or Westlaw®. Prepare an appellate brief, using Ohio Citation format.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): 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-2991 Paralegal Capstone

01 Semester Credit

Capstone course in Paralegal Studies. This course is designed to ready the student for entry into the legal community through intensive study of the paralegal profession and additional development of the student's organizational, communication and critical analysis skills using modalities such as portfolio preparation, mock

interviews and advanced research and writing assignments.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): Departmental approval: completion, or in process of 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, pharmacy abbreviations and terminology, management, organizations, information resources, regulations, law and ethics.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0990 Language Fundamentals II or eligibility for ENG-1010 College Composition I by placement testing or prior coursework.

CTAN Approved: CPT001 (2 of 2 courses)

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-1750 Medication Calculations**01 Semester Credit**

Applications and activities to build skills in medication calculations, conversions, and measurements for pharmacy, nursing, and allied health. Includes metric system, formula manipulation, solving algebraic equations and systems, children's dosages, body surface area (BSA), and weight-based dose calculations. Basic skill reviews on fractions, ratios and percentages.

Lecture 01 hour. Laboratory 00 hours.

Prerequisite(s): MATH-0955 Beginning Algebra; or appropriate math placement score; 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): PHM-1360 Pharmacy Practice II, or concurrent enrollment or departmental approval may be extended to students with adequate documentation showing familiarity with pharmacy practice and ability to perform calculations.

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): ENG-1010 College Composition I.

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 ENG-101H Honors College Composition I.

OAN Approved: OAH045

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. Prepares students with work in philosophy, applied ethics, and any area of learning requiring reasoned views.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors 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): ENG-1010 College Composition I with a grade of "B" or higher, or ENG-101H Honors College Composition I, or departmental approval.

OAN Approved: OAH046

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 or departmental approval.

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.

CTAN Approved: CTBPO

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.

Physical Education

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.

CTAN Approved: CTBPO

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.

Physical Education

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 Credit

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 Credit**

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-1550 Hula Hoop Fitness**01 Semester Credit**

A low intensity aerobic exercise program that incorporates core and off-body hoop dance skill training. Students will learn choreographed hoop dance routines and drills targeting large muscle groups featuring a variety of rhythms. Introduces hoop dance and toning exercises at the beginner and intermediate levels.

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.)

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. 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.

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 hours. 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 hours. 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 1.5 hours. Laboratory 1.5 hours.

Prerequisite(s): PTAT-1300 Functional Anatomy, and HTEC-1000 Introduction to Patient Care; and departmental approval.

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 1.5 hour. Laboratory 1.5 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 PTAT-1311 Fundamentals of Physical Therapy, and departmental approval.

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 hours. Laboratory 03 hours.

Prerequisite(s): PTAT-1100 Introduction to Physical Therapist Assisting, PTAT-1300 Functional Anatomy, 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 hours. 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 diagnoses and impairments.

Lecture 03 hours. 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, 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 population.

Lecture 02 hours. 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. Typical aging and its implications for treatment and wellness.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): PTAT-1401 Clinical Pathophysiology, and PTAT-1420 Therapeutic Exercise; and concurrent enrollment in PTAT-2301 Long Term Physical Therapy Rehabilitation Procedures, and departmental approval.

PTAT-2341 Psychosocial Issues in Physical Therapy
02 Semester Credits

Designed to familiarize the student with the common mental health illnesses and psychosocial issues that may affect physical therapy interventions.

Lecture 02 hours. 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 hours. Laboratory 00 hours.

Other Required Hours: Practicum: 320 hours per semester (40 hours per week for 8 weeks).

Prerequisite(s): Concurrent enrollment in PTAT-2970 Practicum Seminar, and departmental approval: completion of all didactic coursework in the PTAT program.

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 hours. Laboratory 00 hours.

Other Required Hours: Clinical Practicum: 320 hours per semester (40 hours per week for 8 weeks).

Prerequisite(s): PTAT-2840 Clinical Practicum I, and concurrent enrollment in PTAT-2970 Practicum Seminar, and 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: 240 hours per semester. (40 hours per week for 6 weeks)

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 Credit

Integration of knowledge and skills acquired in academic coursework and clinical practicum. Clarify role and function of the physical therapist assistant in preparation for licensure and entry into the workforce.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Seminar: 15 hours per semester.

Prerequisite(s): Concurrent enrollment in PTAT-2840 Clinical Practicum I; and concurrent enrollment in PTAT-2850 Clinical Practicum II, and departmental approval: completion of all didactic coursework in PTAT program.

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 Credit

Designed to allow students to recognize and interpret electrocardiography (ECG) tracings and their clinical significance. Includes application of Advanced Cardiovascular Life Support (ACLS) treatment protocols, patient education and communication with other health care professionals utilizing appropriate medical terminology as it relates to the cardiac conduction system. Techniques of 12-lead EKG recording and interpretation presented.

Lecture 00 hours. 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): PA-1200 History and Physical Exam Techniques I.

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 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 Physician Assistant (PA) profession, including information about the history of the profession, the American Academy of Physician Assistants' (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): PA-1200 History and Physical Exam Techniques I or concurrent enrollment.

PA-1590 Introduction to Clinical Medicine

02 Semester Credits

Presentation of medical problems and diseases encountered in primary care practice including etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management, and potential complications of diseases. Differential diagnosis of related or similar disease processes included.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I, or concurrent enrollment.

PA-1600 Clinical Medicine I

04 Semester Credits

Presentation of medical problems and diseases of the head, eyes, nose, oral cavity/ throat (HEENT) respiratory and cardiovascular systems encountered in primary care practice. Topics include etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management, and potential complications of the HEENT, respiratory and cardiovascular systems.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I, or concurrent enrollment.

PA-1610 Clinical Medicine II

04 Semester Credits

Medical problems and diseases encountered in primary care practice, emphasizing musculoskeletal, neurological, dermatological, genitourinary and gastrointestinal systems. Discussion of the etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management and potential complications included.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

PA-1620 Clinical Medicine III

04 Semester Credits

Presentation of medical disorders and problems of obstetrics, gynecology and pediatrics with emphasis on age appropriate and culturally diverse patient clinical presentations. Includes recognition, descriptions and research of disease processes based on signs and symptoms, differential diagnoses with identification and utilization of appropriate diagnostic tools and development of a therapeutic plan and preventive medicine.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

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

Essentials of assessment and management of the initial evaluation, stabilization, and treatment including patient

education, disposition and follow-up of the acutely ill patient who requires expeditious medical, surgical, or psychiatric care. Particular attention is paid to awareness of special considerations and cultural diversity in patient care and professional conduct and communication.

Lecture 04 hours. Laboratory 00 hours.

Prerequisite(s): PA-1200 History and Physical Exam Techniques I.

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 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-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 hours. 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 Credit

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 hours. 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 Credit

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 hours. 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 Credit**

[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**

Introductory science course designed to develop an understanding of the phenomena of our everyday life via the laws of physics. The emphasis is not on problem-solving course, but on encouraging students to understand and appreciate their environment from a new perspective. Explores application of various fields of physics to everyday living, household applications, sports applications and other applications discussed.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I; and MATH-0955 Beginning Algebra, or appropriate score on Math placement test.

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-0965 Intermediate Algebra, or departmental approval.

OAN Approved: OSC014

PHYS-1220 College Physics II**04 Semester Credits**

Introductory algebra-based physics course designed for non-physics majors covering areas of physics which include 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**

Course designed for Radiography program students. Basic introduction to college physics. Reviews basic mathematical operations needed for this course. Discusses energy, matter, Newtonian laws, atomic structure, electrostatic, electrodynamics, magnetism, electromagnetism that will lead to the study of x-ray generators, x-ray circuitry, and automatic exposure devices. Includes laboratory application of related physics experiments and the use of quality assurance testing tools to ensure radiographic quality control.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): RADT-1351 Image Acquisition and Evaluation, 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 crosslisted as BIO-1300. Credit can only be earned once for either course.] Plant structure and diversity is examined through the study of the cells, tissues, and organs of plants, as well as their life cycles and reproduction. The physiology of plants is explored through the study of plant transport, nutrients, hormones, growth, and metabolism. Additionally, horticulturally significant bacteria, protists, and fungi are examined.

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 production and marketing 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.

Alternative growing methods including hydroponics, high tunnel aeroponics and other soil-less methods.

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; or departmental approval.

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, graphics and processes of design and their relationship to landscape design. Technical development of landscape drawings using hand-drawn techniques. 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 02 hours. Laboratory 03 hours.

Prerequisite(s): None.

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-1441 Introduction to Landscape Design, 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-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-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, 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): ENG-1010 College Composition I or eligibility for ENG-101H Honors College Composition I; or departmental approval.

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

An interdisciplinary examination of the complex nature, types, and historical evolution of terrorism. Will analyze terrorism and its political, economic, religious, psychological, and ideological dimensions. Select acts of domestic and global terrorism will be examined to better understand terrorists' motives, methods, and objectives. Counterterrorism strategies and how democratic nations should respond to terrorism and future terrorist threats will be evaluated.

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-1200 Physical Assessment for the Practical Nurse
02 Semester Credits**

Principles and practices of basic nursing care to individuals with selected health deviations. Develop assessment skills including physical assessment for the adult and evaluating physiologic changes related to aging. Incorporating skills in problem-solving using the nursing process as applied to individual situations with goal of providing safe and competent nursing care to individual adult patients. Laboratory screening procedures

introduced. Documentation and reporting findings are discussed.

Lecture 02 hours. Laboratory 01 hours.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program, and concurrent enrollment in BIO-1050 Human Biology; and concurrent enrollment in BIO-105L Human Biology Laboratory; and concurrent enrollment in PNUR-1322 Nursing Management of the Adult I; and concurrent enrollment in PNUR-1210 Fundamentals of Practical Nursing.

**PNUR-1210 Fundamentals of Practical Nursing
03 Semester Credits**

This course discusses the principles and practices of basic nursing care of adults through the life span using Orem's self-care deficit theory. Introduction to evolution of nursing, legal aspects of nursing, and cultural diversity. Basic concepts of nutrition and medical/ surgical asepsis are presented.

Lecture 1.5 hours. Laboratory 4.5 hours.

Other Required Hours: On campus lab and clinical: 9 hours per week for 8 weeks. Lecture: 3 hours per week for 8 weeks.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program, and concurrent enrollment in BIO-1050 Human Biology; and concurrent enrollment in BIO-105L Human Biology Laboratory; and concurrent enrollment in PNUR-1200 Physical Assessment for the Practical Nurse; and concurrent enrollment in PNUR-1322 Nursing Management of the Adult I.

**PNUR-1322 Nursing Management of the Adult I
03 Semester Credits**

Focuses on care of adults with acute and recurring medical and surgical conditions. Begin to develop critical thinking skills along with the nursing process providing the framework for delivery of nursing care to the adult patient.

Lecture 02 hours. Laboratory 05 hours.

Other Required Hours: On campus lab and clinical: 9 hours per week for 8 weeks.

Lecture: 03 hours per week for 8 weeks.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program, and concurrent enrollment in PNUR-1210 Fundamentals of Practical Nursing, and concurrent enrollment in PNUR-1200 Physical Assessment for the Practical Nurse, and concurrent enrollment in BIO-1050 Human Biology, and concurrent enrollment in BIO-105L Human Biology Laboratory.

PNUR-1330 Nursing Management of Adults II
08 Semester Credits

Focuses on the provision of safe, competent care of adults with acute and recurring medical and surgical conditions. Students continue to develop skills in problem-solving and critical thinking through the use of the nursing process.

Lecture 04 hours. Laboratory 12 hours.

Other Required Hours: On campus lab and clinical: 12 hours.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program; and PNUR-1322 Nursing Management of the Adult I; and concurrent enrollment in PSY-1010 General Psychology; and concurrent enrollment in ENG-1010 College Composition I.

PNUR-1341 Lifespan Nursing for the Practical Nurse
04 Semester Credits

Designed to provide nursing care to women of childbearing age, children, groups of patients, and their families. Emphasis on leadership and management role of the licensed practical nurse.

Lecture 02 hours. Laboratory 06 hours.

Other Required Hours: Laboratory: on campus and clinical hours 06.

Prerequisite(s): Departmental approval: admission to Practical Nursing Program; and PSY-2020 Life Span Development or concurrent enrollment; and PNUR-1330 Nursing Management of Adults II.

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 and 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): 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-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-202H 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.

UAN 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-204H 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.

UAN Approved: OSS016

PSY-205H 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-206H 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-207H 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-208H 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-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-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.

WAN 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.

WAN 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-1351 Image Acquisition and Evaluation
03 Semester Credits

Analysis and application of radiographic factors influencing the acquisition and evaluation of the radiographic image, considering both analog and digital technology. Students are required to conduct x-ray exposure experiments, under supervision, using standard energized imaging 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. Techniques and positioning variations for pediatric age specific patients. 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 medicolegal 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 and geriatric 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 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 576 hours. This includes 16 hours of embedded lecture, delivered at clinical site.

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 hours. 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 Credit

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 hours. 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 hours. 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-2362 Interventional Radiography and Pharmacology
01 Semester Credit

Introduction to specialized procedures and interventional imaging within diagnostic radiography. Foundational knowledge and skills to enable effective contribution as a member of a specialized imaging team. Basic concepts of pharmacology in interventional and diagnostic radiography. Laboratory demonstration of related patient care and technical skills.

Lecture 00 hours. Laboratory 02 hours.

Prerequisite(s): BIO-1221 Anatomy and Physiology for Diagnostic Medical Imaging; and concurrent enrollment in RADT-2350 Radiographic Pathology; and departmental approval.

RADT-2401 Imaging Systems

02 Semester Credits

Presentation of imaging systems and imaging modalities. Topics include conventional and digital fluoroscopy, image intensification, conventional tomography, computerized tomography, magnetic resonance imaging, mammography, bone densitometry, ultrasound, nuclear medicine, radiation therapy, digital imaging processing and cross-sectional anatomy.

Lecture 02 hours. Laboratory 00 hours.

Prerequisite(s): RADT-1351 Image Acquisition and Evaluation or concurrent enrollment, or departmental approval.

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 Mammography program, or departmental approval.

RADT-251A Introduction to Mammography

01 Semester Credit

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 Credit

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 Credit

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 Credit

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 Credit

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 Credit

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 Credit**

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 Credit**

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 hours. 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 hours. 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, and departmental approval: admission to the program.

RADT-291B Clinical Radiography II**01 Semester Credit**

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 hours. 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 hours. 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 hours. 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 hours. 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): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-1xxx 1000-level MATH course or higher, and MUS-1010 Survey of European Classical Music, or 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, and RAT-1311 Studio Operations, and departmental approval: admission to program.

RAT-1311 Studio Operations**03 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 04 hours.

Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH-1xxx 1000-level MATH course or higher, and MUS-1010 Survey of European Classical Music, or 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, and RAT-1300 Introduction to Recording, and 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, and RAT-1311 Studio Operations, and 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-1300 Introduction to Recording, and RAT-1311 Studio Operations; and concurrent enrollment in RAT-1511 Recording Lab I, and departmental approval.

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): RAT-1311 Studio Operations, and RAT-1320 Audio Transducers; and concurrent enrollment in RAT-1500 Recording Theory I, and 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, and RAT-1511 Recording Lab I, and 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, and RAT-1311 Studio Operations, and MUS-1130 MIDI Technology I, and 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-1320 Audio Transducers, RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I; and concurrent enrollment in RAT-2311 Recording Lab II, and 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): RAT-1320 Audio Transducers, and RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I; and concurrent enrollment in RAT-2300 Recording Theory II.

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-1520 Audio Signal Processing, and RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II, and RAT-2330 Digital Audio Mixing, and RAT-2341 Location Recording, and 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-1520 Audio Signal Processing, and RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II, and RAT-2330 Digital Audio Mixing, and RAT-2341 Location Recording, and departmental approval.

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-2940 Respiratory Care Field Experience 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 and airways, humidity and aerosol therapy, postural drainage therapy, incentive spirometry, asthma management, inhaled medications, positive pressure adjuncts, 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, ventilation safety, and nutritional concerns. Discussion on ventilator management and 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-2950 Respiratory Care Field Experience 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 homecare 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-2950 Respiratory Care Field Experience 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-2950 Respiratory Care Field Experience II.

RESP-2940 Respiratory Care Field Experience I
01 Semester Credit

Field experience in the clinical setting on respiratory care equipment, policies, and procedures. Emphasis on patient assessment, bedside pulmonary function testing, aerosol therapy, arterial blood gas punctures and oxygen therapy.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 240 hours (24 hours per week for 10 weeks)

Prerequisite(s): RESP-1320 Acid-Base and Hemodynamics, and RESP-1330 Cardiopulmonary Assessment and Pulmonary Diseases, and RESP-1340 Pharmacology for Respiratory Care.

RESP-2950 Respiratory Care Field Experience II
02 Semester Credits

Field experience in the clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on intubation, pulmonary function testing, airway clearance techniques, hyperinflation techniques, manual ventilation and suctioning, and mechanical ventilation. Clinical activities also include proficiencies completed in patient assessment, aerosol therapy, bedside pulmonary function testing, arterial blood gas sampling and analysis, and oxygen therapy.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Directed Practice: 360 hours (24 hours per week for 15 weeks).

Prerequisite(s): RESP-2210 Introduction to Mechanical Ventilation RESP-2310 Mechanical Ventilation or concurrent enrollment, and RESP-2910 Respiratory Care Directed Practice I.

RESP-2960 Respiratory Care Field Experience III
02 Semester Credits

Capstone course in Respiratory Care. Field experience in clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on adult invasive and non-invasive mechanical ventilation, weaning from mechanical ventilation, pediatric patient care, and respiratory care in the long-term acute care facility environment.

Lecture 00 hours. Laboratory 00 hours.

Other Required Hours: Field Experience: 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.

OAN 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.

OAN Approved: OSS021

SOC-1020 Social Institutions**03 Semester Credits**

A sociological examination of major social institutions: the family, religion, education, politics, economy, and health care. Analysis of social dynamics and change. Use of theory and research to develop an understanding of institutional development and evolution.

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-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 SOC-101H Honors Introductory Sociology, or PSY-1010 General Psychology, or PSY-101H Honors General Psychology, or ANTH-1010 Cultural Anthropology.

OAN 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 or SOC-101H Honors Introductory Sociology, and eligibility for ENG-101H Honors College Composition I.

OAN Approved: OSS025

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.

OAN Approved: OSS023

SOC-2040 Introduction to Social Work**03 Semester Credits**

Introduces students to ideas, venues, and susceptible populations associated with the social work profession. Stresses knowledge, ethics, principles, values, and skills that exemplify the foundation of a professional social worker. Presents a survey of theoretical and practical knowledge used in social work practice at the entry level.

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; and ENG-1010 College Composition I, or ENG-101H Honors College Composition I.

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 SOC-101H Honors 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, or SOC-101H Honors 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 SOC-101H Honors 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 SOC-101H Honors 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 PSY-101H Honors General Psychology, or SOC-1010 Introductory Sociology or SOC-101H Honors Introductory Sociology, or CJ-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 SOC-101H Honors 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 SOC-101H Honors 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 SOC-101H Honors 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 SOC-101H Honors 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.

OAN Approved: OFL019

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-1030 Spanish for Law Enforcement
04 Semester Credits

Includes cross cultural issues relevant to interactions between non-Hispanic law enforcement officers and the Hispanic community members; involves introduction too and practice with basic Spanish vocabulary specific to real life situations in the law enforcement profession.

Lecture 03 hours. Laboratory 02 hours.

Prerequisite(s): None.

SPAN-2010 Intermediate Spanish I
03 Semester Credits

The first in a series of two intermediate Spanish courses reviews and expands upon introductory level vocabulary, grammar and culture through multiple approaches. Emphasis on further development of spoken and written communication, listening and reading comprehension, and cultural awareness in functional contexts is designed to build upon established proficiencies at the beginning level.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPAN-1021 Beginning Spanish Language and Cultures II, or two years of high school Spanish, or departmental approval.

SPAN-2020 Intermediate Spanish Language and Cultures II
03 Semester Credits

Second intermediate course further develops spoken and written communication, listening and reading comprehension, and cultural awareness and competency in functional contexts through multiple approaches geared towards greater fluency.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): SPAN-2011 Intermediate Spanish Language and Culture 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.
 OAN Approved: OCM001

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

Introduction to the oral communication of various forms of fiction and nonfiction for live performance. Involves the analysis of literary works in preparation for performance with an emphasis on the development of delivery skills for interpretive reading. *Lecture 03 hours. Laboratory 00 hours.*
Prerequisite(s): SPCH-1010 Fundamentals of Speech Communication, and ENG-1010 College Composition I.

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

Examines the fundamental models, concepts, and theories of business communication by exploring the contexts in which it exists. Includes an exploration of leadership and management styles, cultural diversity and communication, conflict management and negotiation approaches, as well as skills and strategies for interviewing success.

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. Examines 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): SES-1040 Teaching Exercise Training Techniques; 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 hours. Laboratory 00 hours.

*Other Required Hours: Practicum: 8 hours a week for 15 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 Credit

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 hours. 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-0955 Beginning Algebra, 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 hours. 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 hours. 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 hours. 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 hours. 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

The examination of theatre as a performance art by the study of its origins through contemporary times, and how contemporary theatre practitioners approach their crafts. Performance not required.

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 1990s.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): ENG-0990 Language Fundamentals II, or eligibility for ENG-1010 College Composition I.

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): None.

OAN Approved: OAH028

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 hours. Laboratory 00 hours.

Other Required Hours: Concentrated practice: 14 hours per week.

Prerequisite(s): By audition, or Director/Producer approval.

OAN 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 hours. Laboratory 00 hours.

Other Required Hours: Concentrated practice: 14 hours per week.

Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecrafts, or concurrent enrollment.

OAN Approved: OAH026

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[e], or playwright. Additional time required outside of class to attend at least two theatre productions over the length of the course.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): THEA-1010 Theatre Appreciation.

OAN 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

Emphasizes the historical and critical study of theatre and drama from its origins to the Renaissance. An overview of the development of the physical theatre, the evolution of dramatic presentations, and representative playwrights.

Lecture 03 hours. Laboratory 00 hours.

Prerequisite(s): THEA-1010 Theatre Appreciation, or ENG-0990 Language Fundamentals II or eligibility for ENG-1010 College Composition I.

THEA-2220 History of Theatre and Drama II

03 Semester Credits

Emphasizes the historical and critical study of theatre and drama from the Renaissance to present-day theatrical conventions. An overview of the development of the physical theatre, the evolution of dramatic presentations, and representative playwrights.

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 hour. 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 anesthesia, analgesia, emergency medicine and dentistry. Students learn how to induce, maintain, and monitor anesthesia, administer and assess response to analgesics, assist with cardiopulmonary resuscitation, and perform routine veterinary dental cleaning procedures.

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: 3.5 hours per week.

Seminar: .5 hours 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 websites 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-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 IT-1150 Intro to Web Programming 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**

All courses formerly listed under VCDV have been moved under Media Arts and Filmmaking (MARS). See page 402.

**VISUAL COMMUNICATION AND DESIGN
(Advertising Design) • (Graphic Design) -
VCAD/VCGD**

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.

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.

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-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 photography, learning how to maximize the capabilities of your digital camera shooting in available light. Conceptual issues and stylistic characteristics of several photographic genres will be discussed. Visual assignments will be used to explore a variety of photographic traditions and increase your understanding of the potential of digital technology. You will use your critical thinking skills to greater understand the potential of the photographic narrative and concepts. Students must have their own DSLR camera with manual controls including Aperture, Shutter Speed, ISO settings and RAW file format capability. College specified digital printing paper and portfolio box and a Mac/PC external hard-drive are required. Paper, box, binder and a limited selection of cameras are available at the 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 websites 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.

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 website using industry standard tools.

Lecture 02 hours. Laboratory 03 hours.

Prerequisite(s): VCIM-1570 Web Publishing I: HTML, or concurrent enrollment; or IT-1150 Introduction to Web Programming.

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 IT-1150 Introduction to Web Programming.

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): IT-1150 Introduction to Web Programming 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-2401 Game Design IV: Game Publishing

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 05 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.

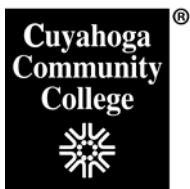
Lecture 00 hours. Laboratory 00 hours.

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
Ohio Transfer Module

The Ohio Department of Higher Education’s Articulation and Transfer Policy established the Ohio Transfer Module, which may be a subset or the entire set of a public higher education institution’s general education curriculum in Associate of Arts, Associate of Science and baccalaureate degree programs. Students in applied associate degree programs may complete some individual Ohio Transfer Module courses within their degree program or continue beyond the degree program to complete the entire Transfer Module. The Ohio Transfer Module contains 36-40 semester or 54-60 quarter hours of course credit in English composition (minimum of 3 semester or 5 quarter hours); mathematics, statistics and logic (minimum of 3 semester or 3 quarter hours); arts and humanities (minimum of 6 semester or 9 quarter hours); social and behavioral sciences (minimum of 6 semester or 9 quarter hours); and natural sciences (minimum of 6 semester or 9 quarter hours). Oral communication and interdisciplinary areas may be included as additional options. Additional elective hours from among these areas make up the total hours for a completed Ohio Transfer Module. Courses for the Ohio Transfer Module should be 100- and 200-level general education courses commonly completed in the first two years of a student’s course of study. Each public university and technical and community college is required to establish and maintain an approved Ohio Transfer Module.

Ohio Transfer Module course(s) or the full module completed at one college or university will automatically meet the requirements of individual Ohio Transfer Module course(s) or the full Ohio Transfer Module at another college or university once the student is admitted. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student

who completes the Ohio Transfer Module at Institution S (sending institution) and then transfers to Institution R (receiving institution) is said to have completed the Ohio Transfer Module portion of Institution R’s general education program. Institution R, however, may have general education courses that go beyond its Ohio Transfer Module. State policy initially required that all courses in the Ohio Transfer Module be completed to receive its benefit in transfer. However, subsequent policy revisions have extended this benefit to the completion of individual Ohio Transfer Module courses on a course-by-course basis. More information and the complete Ohio Transfer Module policy can be found at: <https://www.ohiohighered.org/transfer/policy>.

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 an Ohio Transfer Module or Transfer Assurance Guide 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 Ohio Transfer Module may also be part of an approved Transfer Assurance Guide (TAG). OANs 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://transfercredit.ohio.gov/ap/20>.

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.

Oral Communication

SPCH-1010	Fundamentals of Speech <i>OAN Approved: OCM004</i>	3 Cr.
SPCH-101H	Honors Fundamentals of Speech <i>OAN Approved: OCM004</i>	3 Cr.

Mathematics, Statistics and Logics: minimum of three semester hours

MATH-1100	Mathematical Explorations <i>OAN Approved: TMMSL</i>	3 Cr.
MATH-1240	Contemporary Mathematics <i>OAN Approved: TMMSL</i>	3 Cr.
MATH-1380	Mathematics for Elementary & 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-1490	Business Probability and Statistics I <i>OAN Approved: OBU009 (Course 1 of 2)</i>	3 Cr.
MATH-1500	Business Probability and Statistics II <i>OAN Approved: OBU009 (Course 2 of 2)</i>	3 Cr.
MATH-1530 (formerly 1521)	College Algebra <i>OAN Approved: TMM001</i>	4 Cr.
MATH-153H (formerly 152H)	Honors College Algebra <i>OAN Approved: TMM001</i>	4 Cr.
MATH-1540 (formerly 1510)	Trigonometry <i>OAN Approved: TMM003</i>	3 Cr.
MATH-154H (formerly 151H)	Honors Trigonometry <i>OAN Approved: TMM003</i>	3 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 & OMT018</i>	4 Cr.
MATH-231H	Honors Calculus III <i>OAN Approved: TMM018 & OMT018</i>	4 Cr.
MATH-2410	Introduction to Linear Algebra <i>OAN Approved: OMT019</i>	3 Cr.
MATH-2520	Differential Equations <i>OAN Approved: TMM020 & OMT020</i>	3 Cr.

Appendix I: Transfer Module

Arts and Humanities: minimum of six semester hours; select from at least two areas

ART-1010	Art Appreciation	3 Cr.
ART-1040	Survey of Non-Western Art	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.

DANC-1100	Dance Appreciation	3 Cr.
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ENG-2310	American Literature I <i>OAN Approved: OAH053</i>	3 Cr.
ENG-2320	American Literature II <i>OAN Approved: OAH054</i>	3 Cr.
ENG-2350	British Literature I <i>OAN Approved: OAH055</i>	3 Cr.
ENG-2360	British Literature II <i>OAN Approved: OAH056</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.
ENG-2730	Exploration of World Mythology	3 Cr.

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.

Arts and Humanities (Continued)

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-2010	Peoples and Cultures of the World	3 Cr.
ANTH-2110 (formerly ANTH 1030)	Archaeology <i>OAN Approved: OSS003</i>	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: OSS005</i>	4 Cr.
ECON-2620 (formerly ECON-1620)	Principles of Microeconomics <i>OAN Approved: OSS004</i>	4 Cr.

Appendix I: Transfer Module

Social and Behavioral Sciences (Continued)

GEOG-1010	World Regional Geography <i>OAN Approved: OSS008</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: OHS041</i>	3 Cr.
HIST-101H	Honors History of Civilization I	3 Cr.
HIST-1020	History of Civilization II <i>OAN Approved: OHS042</i>	3 Cr.
HIST-102H	Honors History of Civilization II	3 Cr.
HIST-1510	United States History to 1877 <i>OAN Approved: OHS043</i>	3 Cr.
HIST-151H	Honors United States History to 1877	3 Cr.
HIST-1520	United States History Since 1877 <i>OAN Approved: OHS044</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	African History to 1877	3 Cr.
HIST-2160	African History 1877- Present	3 Cr.
HIST-2660	Women in American History	3 Cr.

POL-1010	American National Government <i>OAN Approved: OSS011</i>	3 Cr.
POL-101H	Honors American National Government <i>OAN Approved: OSS011</i>	3 Cr.
POL-1020	State and Local Government <i>OAN Approved: OSS014</i>	3 Cr.
POL-2030 (formerly POL-1030)	Comparative Government <i>OAN Approved: OSS013</i>	3 Cr.
POL-2060	Political Systems of Africa	3 Cr.
POL-2070 (formerly POL-1070)	International Relations <i>OAN Approved: OSS012</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.

Social and Behavioral Sciences (Continued)

PSY-2010	Child Growth and Development <i>OAN Approved: OSS045</i>	3 Cr.
PSY-2020	Life Span Development <i>OAN Approved: OSS048</i>	4 Cr.
PSY-2040	Social Psychology <i>OAN Approved: OSS016</i>	3 Cr.
PSY-2050	Psychology of Personality <i>OAN Approved: OSS018</i>	3 Cr.
PSY-2060	Adolescent Psychology <i>OAN Approved: OSS046</i>	3 Cr.
PSY-2080	Abnormal Psychology <i>OAN Approved: OSS017</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: OED003</i>	3 Cr.

SOC-1010	Introductory Sociology <i>OAN Approved: OSS021</i>	3 Cr.
SOC-101H	Introductory Sociology <i>OAN Approved: OSS021</i>	3 Cr.
SOC-1020	Social Institutions	3 Cr.
SOC-2010	Social Problems <i>OAN Approved: OSS025</i>	3 Cr.
SOC-201H	Honors Social Problems	3 Cr.
SOC-2020 (formerly SOC-1210)	Sociology of the Family <i>OAN Approved: OSS023</i>	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.

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.

Appendix I: Transfer Module

Natural and Physical Sciences: minimum of six semester hours; one of the courses must be a lab course

ANTH-1210	Human Evolution	4 Cr.
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 Approved: OSC004</i>	4 Cr.
BIO-2060	Principles of Genetics	3 Cr.
BIO-2150	Environmental Science	3 Cr.
BIO-2331 (formerly BIO-2330)	Anatomy and Physiology I	4 Cr.
BIO-2341 (formerly BIO-2340)	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.

ESCI-1310	Physical Geography <i>OAN Approved: OSS006 (Course 1 of 2)</i>	3 Cr.
ESCI-131L	Laboratory in Physical Geography <i>OAN Approved: OSS006 (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.

Natural and Physical Sciences (Continued)

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.

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.

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.

APPENDIX II
Transfer Assurance Guides

Ohio Transfer Initiatives

The State of Ohio through the leadership of the Ohio Department of Higher Education 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:

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

Transfer Assurance Guides (TAGs) comprise Ohio Transfer Module courses and additional courses required for an academic major called TAG courses. A TAG is an advising tool to assist Ohio university and community and technical college students in planning for specific majors and making course selections that will ensure comparable, compatible, and equivalent learning experiences across Ohio’s public higher education system. A number of area-specific TAG pathways in meta-majors including the arts, humanities, business, communication, education, health, mathematics, sciences, engineering, engineering technologies, social sciences, and foreign languages have been developed by faculty teams.

TAGs empower 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. Students may elect to complete the full TAG or any subset of courses from the TAG. Because of specific major requirements, early identification of a student’s intended major is encouraged.

Additional information on specific can be found on the Ohio Department of Higher Education website: <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

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 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://transfercredit.ohio.gov/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
ART-1100	Select 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.	OAH050
ART-2000	or Life Drawing I	3 Cr.	OAH051

ARTS AND HUMANITIES (Continued)

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.	OAH050
ART-2000	or Life Drawing I	3 Cr.	OAH051
VCPH-1261	or Photography I	3 Cr.	OAH002
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

Appendix II: Transfer Assurance Guides

ARTS AND HUMANITIES (Continued)

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-101H	Honors Introduction to Philosophy	3 Cr.	OAH045
PHIL-2020	Ethics	3 Cr.	OAH046
PHIL-202H	Honors Ethics	3 Cr.	OAH046
Theatre TAG			
THEA-1430	Introduction to Scenery & Stagecrafts	3 Cr.	OAH028
THEA-1500	Acting I	3 Cr.	OAH027
THEA-1540	Rehearsal and Performance	2 Cr.	OAH025
THEA-1550	Practicum in Technical Theatre	2 Cr.	OAH026
THEA-2010	Script Analysis	3 Cr.	OAH024

BUSINESS

Business TAG			
ACCT-1310	Financial Accounting	4 Cr.	OBU010
ACCT-1340	Managerial Accounting	4 Cr.	OBU011
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

BUSINESS (Continued)

MARK-2010	Principles of Marketing	3 Cr.	OBU006
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

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
SPCH-2000	Introduction to Communication Theory	3 Cr.	OCM001
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-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

Appendix II: Transfer Assurance Guides

ENGINEERING & ENGINEERING TECHNOLOGY (Continued)

Bioengineering, Biomedical Engineering TAG			
CHEM-1300 & CHEM-130L	General Chemistry I General Chemistry Laboratory I or	4 Cr. 1 Cr.	OSC008
CHEM-130H	Honors General Chemistry I	5 Cr.	
CHEM-1310 & CHEM-131L	General Chemistry II General Chemistry Laboratory II or	4 Cr. 1 Cr.	OSC009
CHEM-131H	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 Direct Current Circuits I	2 Cr. 2 Cr.	OET001
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 2422	Fundamentals of Engineering Economics	3 Cr.	OES005
MET 2430	Engineering Probability and Statistics	3 Cr.	OES004
MET-2610	Statics	3 Cr.	OES002
MET-2620	Dynamics	3 Cr.	OES003
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

FOREIGN LANGUAGE

Foreign Language TAG			
ASL-1010	Beginning American Sign Language I	4 Cr.	OFL025
FREN-1010	Beginning French I	4 Cr.	OFL001
FREN-1020	Beginning French II	4 Cr.	OFL002
SPAN-1011	Beginning Spanish Language and Culture I	4 Cr.	OFL019

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	3 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

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	or 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

Appendix II: Transfer Assurance Guides

NATURAL/PHYSICAL SCIENCES (Continued)

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-2110	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

SOCIAL SCIENCES (Continued)

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	or Life Span Development	3 Cr.	OSS048
PSY-2060	or Adolescent Psychology	3 Cr.	OSS046
PSY-2100	or Introduction to Aging	3 Cr.	OSS047
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

Collaboration among the Ohio Department of Higher Education, the Ohio Department of Education, and other key stakeholders led to the development of policies and procedures to create statewide career-technical discipline specific articulation agreements and further ensure that students completing coursework at an adult or secondary career-technical institution can articulate and transfer agreed-upon technical courses/programs to any Ohio public institution of higher education and among Ohio public institutions of higher education "without unnecessary duplication or institutional barriers."

Career-Technical Assurance Guides are statewide articulation agreements that guarantee the recognition of learning which occurs at public adult and secondary career-technical institutions and have the opportunity for the award of college credit toward technical courses/programs at any public higher education institution. CTAGs serve as advising tools, identifying the statewide content guarantee and describing other conditions or obligations (e.g., program accreditation or industry credential) associated with the guarantee.

Additional information can be found on the Ohio Department of Higher Education website:
<http://ohiohighered.org/transfer/ct2>

Career-Technical Assurance Guides

Career Technical Assurance Guides (CTAGs) 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:
<https://transfercredit.ohio.gov/ap/9?12230603297588>

Automotive Technology			
CTAUT001 Brakes <i>Student Requirements: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years) 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 Requirements: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years) 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 Requirements: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years) 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 Requirements: Passage of NATEF End of Program Assessment or ASE Certification (current within 2 years) Career-technical secondary or adult faculty sign-off of student safety and laboratory learning</i>	AUTO-1400	Automotive Alignment Steering & Suspension	3 Cr.

Construction			
<i>Student Requirements: Student must matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program.</i>			
CTCON003 Construction Methods and Materials <i>Student Requirements: Successfully complete the ODE secondary course [Carpentry and Masonry Technical Skills (EMIS CODE- 178001)] with a "C" or better, and receive a qualifying/passing score on the "End of Course" examination of 75 or higher.</i>	CNST 2130	Construction Methods, Materials and Equipment	2 Cr.
Culinary and Food Service Management			
CTCF001 Sanitation and Safety <i>Student Requirements: National Restaurant SeroSafe Certificate</i>	HOSP-1020	Sanitation and Safety	2 Cr.
CTCF002 Intro to Hospitality & Tourism <i>Student Requirements: Current ORA ProStart Certificate</i>	HOSP-1010	Introduction to the Hospitality Industry	2 Cr.
CTCF003 Food Production Laboratory <i>Student Requirements: National Restaurant SeroSafe Certificate and Current ORA ProStart Certificate or American Culinary Federation Culinarian certificate</i>	HOSP-1031	Fundamentals of Culinary Arts	3 Cr.
CTCF004 Cooperative Work Experience <i>Student Requirements: Current ORA ProStart Certificate</i>	HOSP-1950	Restaurant/Food Service Management field Experience	1 Cr.
Education			
CTED001 <i>Student Requirements: 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-1161	DC Circuits	3 Cr.
CTEET003 Programmable Logic Controls	EET-2520	Programmable Logic Controllers	3 Cr.
Emergency Medical Technology			
<i>Student Requirements: 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.

Appendix III: Career Technical Assurance Guides

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	3 Cr.
		Heavy Rescue	2 Cr.
CTFFII03 Fire Fighter II	FIRE-1100 and FIRE-1200 and FIRE 1500 and FIRE-2321 and EMT-1320 and EMT-1330	Principles of Emergency Services	3 Cr.
		Principles of Fire and Emergency Services Safety and Survival	2 Cr.
		Fire Behavior and Combustion	2 Cr.
		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, IC³ Certificate 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-1302	Cisco I: Basic 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-1312	Cisco II: Basic Routing and Switching	3 Cr.

Appendix III: Career Technical Assurance Guides

CTIT009 Cisco Exploration III <i>Student Requirement: CCNA Certificate or Passage of Semester Test in Cisco/CCNA Exploration III</i>	EET-2302	Cisco III Intermediate Routing and Switching	3 Cr.
CTIT010 Cisco Exploration IV <i>Student Requirement: CCNA Certificate or Passage of Semester Test in Cisco/CCNA Exploration IV</i>	EET-2312	Cisco IV Basic 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-2110	Reimbursement for Physicians Services	2 Cr.
CTMAT008 Fundamental Procedures	MA-1402 and MA-140L	Basic Clinical Medical Assisting Basic Clinical Medical Assisting Lab	2 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-2413 and MA-241L	Advanced Clinical Medical Assisting Advanced Clinical Assisting Lab	3 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.

Appendix III: Career Technical Assurance Guides

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.	
CTPADNURS002 <i>Student Requirement: LPN <u>and</u> successful completion of ONAM Transition course.</i>	NURS-1300	Health Assessment	2 Cr.
	and NURS-1451	Self-Care Needs: Adult Life Span	8 Cr.
	and NURS-1601	Health Deviations I	8 Cr.
Police Officer Training			
CTBPO Basic Police Officer <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>	HLTH-1230	Standard First Aid & Personal Safety	1 Cr.
	and CJ-1300	Patrol Operations	4 Cr.
	and CJ-1310	Traffic Enforcement and Investigation	3 Cr.
	and CJ-2370	Fire Arms Techniques	3 Cr.
	and CJ-2380	Defensive Driving	2 Cr.
	and PE-1000	Personal Fitness	2 Cr.
	and PE-1190	Self Defense I	1 Cr.

APPENDIX IV
Military Transfer Assurance Guides

Military Training/Experience Credit Transfer

In response to the legislative requirement (Ohio Revised Code 3333.164) to create a military articulation and transfer assurance guide for college-level learning that took place through military training, experience, and coursework, college credit will be granted to students with military training, experience, and/or coursework that is recognized by the American Council on Education (ACE) or a regionally accredited military institution, such as Community College of the Air Force.

In order to streamline the awarding, transferability, and applicability of college credit, service members and veterans are guaranteed to earn certain types of credit(s) or course(s) as specified in the Military Transfer Assurance Guides (MTAGs), which are based on the endorsed baseline standards and procedures by the Chancellor. Equivalent course(s), credits for courses, or block of credit is to be awarded and applied towards general education and/or major course requirements at the receiving institution in accordance with the MTAG guarantee. There is some training, experience, and coursework that the receiving institution may be able to award college credit only toward general or free electives.

In addition, public institutions of higher education shall ensure that appropriate equivalent credit is awarded for military training, experience, and coursework that meet

the baseline standards and procedures according to the Ohio Revised Code 3333.164. This requirement goes beyond credit/course awarded based on the MTAG alignment process.

https://www.ohiohighered.org/valuing_ohio_veterans/toolkit/awarding-credit/transfer-guarantees

Military Transfer Assurance Guides

The MTAGs serve as advising tools, identifying the course(s) or programs that are part of the statewide guarantee. MTAGs includes the military course number, title, and version/rating as appropriate to the various levels of training and experience offered within the military, as well as the ACE approved course number. Each MTAG is assigned a corresponding Ohio Articulation Number from the standard Transfer Assurance Guide tables, which indicates the courses and credit hours students will be awarded for the completed military experience/training.

<https://transfercredit.ohio.gov/ap/35?12230603297588>

Ohio Articulation Number (OAN)

Ohio Articulation Numbers are identifiers used to represent a specific set of learning outcomes for an Ohio Transfer Module or Transfer Assurance Guide course. The OAN is used to identify equivalency between institutions. Courses with an 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.

Engineering & Engineering Technology			
Army Courses			
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #710-21H30-C45</i> (ACE ID #AR-1408-0341 V1) <i>Construction Engineer Supervisor, Advanced Leader</i> <i>Effective Date: October 2009</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #413-12T40-C46</i> (ACE ID #AR-1408-0343 V1) <i>Senior Technical Engineer NCO Senior Leader</i> <i>Effective Date: October 2012</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET015 Surveying <i>Student Requirements: Military Course #420-13T30-C45</i> (ACE ID #AR-1601-0264 V1) <i>Surveyor/Meteorological Crewmember, Advanced Leader</i> <i>Effective Date: October 2009</i>	CNST-2110	Basic Survey Practices	3 Cr.

Appendix IV: Military Transfer Assurance Guides

OET015 Surveying <i>Student Requirements: Military Course #420-13T10 (ACE ID #AR-1606-0279 V2) Field Artillery Surveyor Meteorological Crewmember Effective Date: October 2012</i>	CNST-2110	Basic Survey Practices	3 Cr.
OET015 & OET016 Surveying and Construction Methods & Materials <i>Student Requirements: Military Course #4A-120A (ACE ID #AR-1710-0177 V3) Utilities Operation & Maintenance Technician Warrant Officer Basic Effective Date: October 2011</i>	CNST-2110 and CNST-2130	Basic Survey Practices Construction Methods, Materials and Equipment	3 Cr. 3 Cr.
OET015 & OET016 Surveying and Construction Methods & Materials <i>Student Requirements: Military Course #413-21T10 (ACE ID #AR-1710-0196 V4) Technical Engineer Effective Date: October 2009</i>	CNST-2110 and CNST-2130	Basic Survey Practices Construction Methods, Materials and Equipment	3 Cr. 3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #011-18C30- C45 (ACE ID #AR-1710-0244 V2) Special Forces Qualifications (SF Engineer Sergeants) Advanced Leader Effective Date: July 2015</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
Coast Guard Courses			
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #210020 (ACE ID #CG-1710-0014 V5) Damage Controlman "A" School Effective Date: January 2014</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
Department of Defense Courses			
OET015 Surveying <i>Student Requirements: Military Course #412-101 (ACE ID #DD-1601-0023 V4) Basic Geodetic Survey (BGS) Effective Date: December 2005 – February 2016</i>	CNST-2110	Basic Survey Practices	3 Cr.
Marine Corps Courses			
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #ACC (ACE ID #MC-1601-0026 V4) Combat Engineer Officer Effective Date: March 2011</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #13G (ACE ID #MC-1601-0027 V4) Engineer Operations Chief Effective Date: May 2011</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.

Appendix IV: Military Transfer Assurance Guides

OET015 Surveying <i>Student Requirements: Military Course #14D (ACE ID #MC-1601-0060 V2) Technical Engineering Effective Date: December 2010</i>	CNST-2110	Basic Survey Practices	3 Cr.
OET001 & OET005 DC Circuits and Electronics <i>Student Requirements: Military Course #272 (ACE ID #MC-1715-0116-V6) Basic Electronics, Version 6 Effective Date: October 2009</i>	EET-1161	Direct Current Circuits	3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #ACQ (ACE ID #MC-2202-0007 V1) Combat Engineer Platoon Sergeant Effective Date: October 2011</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
Navy Courses			
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #A-710-0022 (ACE ID #NV-1408-0035 V4) Construction Inspector Effective Date: June 2015</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET015 Surveying <i>Student Requirements: Military Course #A-412-0018 (ACE ID #NV-1601-0257 V2) Surveying Effective Date: May 2011</i>	CNST-2110	Basic Survey Practices	3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #A-710-0010 (ACE ID #NV-1710-0118 V5) Inter-Service Builder "A" School Effective Date: September 2013</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #A-710-0011 (ACE ID #NV-1710-0120 V3) Advanced Builder Effective Date: July 2006</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET016 Construction Methods & Materials <i>Student Requirements: Military Course #A-710-0051 (ACE ID #NV-1710-0272 V1) Construction Management Crew Leader Effective Date: July 2010</i>	CNST-2130	Construction Methods, Materials and Equipment	3 Cr.
OET015 & OET016 Surveying and Construction Methods & Materials <i>Student Requirements: Military Course #A-412-0015 (ACE ID #NV-1713-0003 V3) Advanced Engineering Aid Effective Date: December 2003</i>	CNST-2110 and CNST-2130	Basic Survey Practices Construction Methods, Materials and Equipment	3 Cr. 3 Cr.

Appendix IV: Military Transfer Assurance Guides

<p>OSC021 Algebra-Based Physics Sequence <i>Student Requirement: Military Course #A-661-0010 Nuclear Power School, Enlisted Version 2 (ACE ID #NV-1732-0026-32) Effective Date: November 2006</i></p>	<p>PHYS-1210 and PHYS-1220</p>	<p>College Physics I College Physics II</p>	<p>4 Cr. 4 Cr.</p>
<p>OSC021 & OET001 Algebra-Based Physics Sequence & DC Circuits <i>Student Requirements: Military Course #A-661-0010 (ACE ID #NV-1732-0026-V2EM Nuclear Power School, Enlisted Version 2, Rating of Electrician Mate Effective Date: November 2006</i></p>	<p>PHYS-1210 and PHYS-1220 and EET-1161</p>	<p>College Physics I College Physics II Direct Current Circuits</p>	<p>4 Cr. 4 Cr. 3 Cr.</p>
<p>OSC021 & OET001 Algebra-Based Physics Sequence & DC Circuits <i>Student Requirements: Military Course #A-661-0010 (ACE ID #NV-1732-0026 V2ET) Nuclear Power School, Enlisted Version 2, Rating of Electronics Technician Effective Date: November 2006</i></p>	<p>PHYS-1210 and PHYS-1220 and EET-1161</p>	<p>College Physics I College Physics II Direct Current Circuits</p>	<p>4 Cr. 4 Cr. 3 Cr.</p>

APPENDIX V

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 are identified by use of the letters "H" instead of fourth digit such as "0". (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 VI
Equivalent Courses

The Equivalency Course 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’s 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 2012, require 12 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 12 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.)		
ACCT-1520 (2 Cr.)	QuickBooks Immersion	ACCT-2520 (2 Cr.)		
ANTH-2110 (3 Cr.)	Archaeology	ANTH-1030 (3 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 VI: 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-2200 (3 Cr.)	Word Processing II	ITAP-2200 (3 Cr.)		
AOS-2210 (3 Cr.)	Presentation Software	ITAP-2210 (3 Cr.)		
AOS-2220 (3 Cr.)	Electronic Spreadsheet Use and Design	AOS-1250 (3 Cr.)	ITAP-1250 (3 Cr.)	OADM-1050 (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-2412 (4 Cr.)	Advanced American Sign Language I	ASL-2410 (3 Cr.)	ASL-2411 (4 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.)		

Appendix VI: Equivalent Courses

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-1401 (3 Cr.)	Speedbuilding and Transcription at 100 WPM	C&CR-1400 (2 Cr.)		
C&CR-1451 (3 Cr.)	Speedbuilding and Transcription at 140 WPM	C&CR-1450 (2 Cr.)		
C&CR-1521 (2 Cr.)	Realttime Theory Reinforcement	C&CR-1520 (1 Cr.)		
C&CR-1601 (4 Cr.)	Court Reporting Technology	C&CR-1370 (3 Cr.)	C&CR-1371 (2 Cr.) & C&CR-1310 (2 Cr.)	C&CR-1600 (5 Cr.)
C&CR-2401 (3 Cr.)	Speedbuilding and Transcription at 180 WPM	C&CR-2400 (2 Cr.)		
C&CR-2451 (3 Cr.)	Speedbuilding and Transcription at 225 WPM	C&CR-2450 (2 Cr.)		
C&CR-2602 (3 Cr.)	Technical Terminology	C&CR-2600 (3 Cr.)	C&CR-2601 (3 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.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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.)		
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-1731 (3 Cr.)	Construction Print Reading	CNST-1730 (2 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.)	

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
DANC-1501 (3 Cr.)	Dance Fundamentals	DANC-1500 (3 Cr.)		
DANC-1401 (1 Cr.)	African Dance I	DANC-1400 (3 Cr.)		
DANC-2400 (1 Cr.)	African Dance II	DANC-1410 (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-1341 (1 Cr.)	Foundational Principles of Dental Hygiene Practice	DENT-1340 (1 Cr.)		
DENT-1431 (2 Cr.)	Head and Neck Anatomy	DENT-1430 (3 Cr.)		
DENT-2332 (2 Cr.)	Pharmacology & Therapeutics	DENT-2331 (3 Cr.)		
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-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.)		
DIET-2862 (2 Cr.) & DIET-2863 (2 Cr.)	Geriatric Nutrition Practicum & Community Nutrition Practicum	DIET-2861 (4 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-1940 (1 Cr.)	Field Experience I	ITP-1850 (2 Cr.)	DIS-1850 (2 Cr.)	
DIS-1971 (1 Cr.)	Field Experience Seminar I	ITP-1970 (1 Cr.)	DIS-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-2940 (1 Cr.)	Field Experience II	ITP-2850 (2 Cr.)	DIS-2850 (2 Cr.)	
DIS-2971 (1 Cr.)	Field Experience Seminar II	ITP-2970 (1 Cr.)	DIS-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.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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.)		
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.)		

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
EET-1161 (3 Cr.)	Direct Current Circuits	EET-1110 (3 Cr.)	EET-1160 (2 Cr.) & EET-1170 (2 Cr.)	
EET-1180 (1 Cr.)	Surface Mount Soldering	EET-2160 (1 Cr.)		
EET-1190 (2 Cr.)	Printed Circuit Layout	EET-2150 (1 Cr.)		
EET-1241 (3 Cr.)	Digital Fundamentals	EET-1240 (3 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-2242 (3 Cr.)	C and ASM Programming with Embedded Applications	EET-2240 (3 Cr.)	EET-2241 (3 Cr.)	
EET-2302 (3 Cr.)	Cisco III: Intermediate Routing and Switching	EET-2300 (2 Cr.)	EET-2301 (3 Cr.)	
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-1401 (4 Cr.)	EMT-1400 (4 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.)		

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
ENG-1001 (3 Cr.)	Intensive College Reading & Writing	ENG-1000 (3 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.)		
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.)	HIM-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.)		

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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.)		
HOSP-1451 (4 Cr.)	Contemporary Cuisine	HOSP-1450 (4 Cr.)		
HOSP-1481 (3 Cr.)	Housekeeping and Facilities Management	HOSP-1480 (2 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-2862 (2 Cr.)	Lodging and Tourism Management Experience	HOSP-2860 (4 Cr.)	HOSP-2861 (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-1101 (4 Cr.)	Foundations of Substance Abuse and Addiction	HS-1100 (3 Cr.)	HS-1400 (2 Cr.)	
HS-1110 (3 Cr.)	Crisis Intervention and Child Abuse Issues	HS-2420 (2 Cr.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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-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.)		
IT-1050 (3 Cr.)	Programming Logic	CS-1350 (3 Cr.)		
IT-1060 (2 Cr.)	Introduction to Windows	OADM-1060 (2 Cr.)		
IT-1150 (3 Cr.)	Introduction to Web Programming	ITWM-1010 (3 Cr.)		
IT-2030 (4 Cr.)	ASP.NET Web Programming	ITWM-2030 (4 Cr.)		
IT-2320 (4 Cr.)	Interactive Internet Programming	ITWM-2320 (4 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-2620 (4 Cr.)	Visual Basic .NET Programming	ITMP-2620 (4 Cr.)		
IT-2650 (4 Cr.)	Java Programming	ITMP-2650 (4 Cr.)		
IT-2660 (4 Cr.)	Data Structure & Algorithms	ITMP-2660 (4 Cr.)		
IT-2670 (4 Cr.)	C/C++ Programming Language	CS-2670 (4 Cr.)	ITMP-2670 (4 Cr.)	
IT-2700 (3 Cr.)	Systems Analysis and Design	CS-2700 (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.)		

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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-1402 (2 Cr.) & MA-140L (1 Cr.)	Basic Clinical Medical Assisting & Basic Clinical Medical Assisting Lab	MA-1400 (2 Cr.)	MA-1401 (1 Cr.) & MA-140L (1 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-2413 (3 Cr.) & MA-240L (1 Cr.)	Advanced Clinical Medical Assisting & Advanced Clinical Medical Assisting Lab	MA-1410 (3 Cr.) & MA-2410 (3 Cr.)	MA-2411 (3 Cr.)	MA-2412 (2 Cr.) & MA-241L (1 Cr.)
MARS-1180 (3 Cr.)	Introduction to Media Arts and Filmmaking	VCDV-1180 (3 Cr.)	GCMT-2700 (3 Cr.)	VCIM-2170 (3 Cr.)
MARS-2180 (3 Cr.)	Digital Cinematography	VCDV-2180 (3 Cr.)		
MARS-2280 (3 Cr.)	Short Films: Exploring Genre and Technique	VCDV-2280 (3 Cr.)		
MARS-2380 (3 Cr.)	Visual Effects	VCDV-2380 (3 Cr.)		
MARS-2680 (3 Cr.)	Digital Cinematography II	VCDV-2680 (3 Cr.)		
MARS-2780 (3 Cr.)	Motion Graphics II	VCDV-2780 (3 Cr.)		
MATH-0855 (2 Cr.)	Mastering MATH 0955	MATH-0850 (2 Cr.)		
MATH-0955 (3 Cr.)	Beginning Algebra	MATH-0950 (4 Cr.)	MATH-0960 (4 Cr.)	MATH-0980 (5 Cr.)
MATH-0965 (3 Cr.)	Intermediate Algebra	MATH-1280 (5 Cr.)	MATH-1270 (4 Cr.)	MATH-1200 (4 Cr.)
MATH-1100 (3 Cr.)	Mathematical Explorations	MATH-1141 (3 Cr.)	MATH-1140 (2 Cr.)	MATH-1060 (3 Cr.)
MATH-1240 (3 Cr.)	Contemporary Mathematics	MATH-1250 (4 Cr.)	MATH-1141 (3 Cr.)	MATH-1140 (2 Cr.)
MATH-1530 (4 Cr.)	College Algebra	MATH-1521 (4 Cr.)	MATH-1520 (3 Cr.)	MATH-152H (3 Cr.)
MATH-153H (4 Cr.)	Honors College Algebra	MATH-152H (4 Cr.)	MATH-1521 (4 Cr.)	MATH-1520 (3 Cr.)
MATH-1540 (3 Cr.)	Trigonometry	MATH-1510 (3 Cr.)	MATH-151H (3 Cr.)	

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CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
MATH-154H (3 Cr.)	Honors Trigonometry	MATH-151H (3 Cr.)	MATH-1510 (3 Cr.)	
MET-1120 (2 Cr.)	Computer Applications and Programming	MIT-1100 (2 Cr.)		
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-2422 (3 Cr.)	Fundamentals of Engineering Economics	MET-2420 (4 Cr.)	MET-2421 (2 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.)		
MET-2941 (1-4 Cr.)	Additive Manufacturing Internship	MET-2940 (1 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.)

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
MT-2380 (3 Cr.)	Advanced Massage Therapy Clinic	MT-2870 (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.)		
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-1451 (7 Cr.)	Self Care Needs: Adult Life Span	NURS-1401 (4 Cr.) & NURS-1500 (4 Cr.)	NURS-1450 (8 Cr.)	
NURS-1601 (7 Cr.)	Health Deviations I	NURS-1600 (8 Cr.)		
NURS-2301 (8 Cr.)	Specialized Health Care Needs	NURS-2300 (9 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-2501 (3 Cr.)	Optical Business	OPT-2500 (2 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-1001 (3 Cr.)	Introduction to Paralegal Profession	PL-1000 (2 Cr.)		

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
PL-1502 (3 Cr.)	Law Office Technology	PL-1500 (3 Cr.)	PL-1501 (2 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-2301 (4 Cr.)	Torts and Evidence	PL-2300 (3 Cr.)		
PL-2991 (2 Cr.)	Paralegal Capstone	PL-2990 (1 Cr.)		
PNUR-1322 (3 Cr.)	Nursing Management of Adults I	PNUR-1321 (7 Cr.)		
POL-2030 (3 Cr.)	Comparative Politics	POL-1030 (3 Cr.)		
POL-2070 (3 Cr.)	International Relations	POL-1070 (3 Cr.)		
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-1351 (3 Cr.)	Image Acquisition and Evaluation	RADT-1350 (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-2401 (2 Cr.)	Imaging Systems	RADT-2400 (3 Cr.)		
RADT-2911 (7 Cr.)	Clinical Radiography II	RADT-2910 (7 Cr.)		
RADT-2921 (5 Cr.)	Clinical Radiography III	RADT-2920 (5 Cr.)		
RAT-1311 (3 Cr.)	Studio Operations	RAT-1310 (4 Cr.)		
RAT-1511 (2 Cr.)	Recording Lab I	RAT-1510 (3 Cr.)		
RAT-2311 (2 Cr.)	Recording Lab II	RAT-2310 (3 Cr.)		

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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.)		
RESP-2940 (1 Cr.)	Respiratory Field Experience I	RESP-2910 (3 Cr.)		
RESP-2950 (2 Cr.)	Respiratory Field Experience II	RESP-2920 (5 Cr.)		
RESP-2960 (2 Cr.)	Respiratory Field Experience III	RESP-2930 (5 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.)		
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.)

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CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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.)		
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.)	
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.)		
VCIM-2401 (3 Cr.)	Game Design IV: Game Publishing	VCIM-2400 (3 Cr.)		
VCPH-1050 (3 Cr.)	Black and White Photography	GCMT-1500 (3 Cr.)		

Appendix VI: Equivalent Courses

CURRENT COURSE		DELETED COURSES THAT ARE EQUIVALENT FOR GRADE REPEAT		
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-2260 (3 Cr.)	Photography II	VCPH-1350 (3 Cr.)	VCPH-2000 (3 Cr.)	GCMT-1520 (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-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
BADM-1490	Worker's Compensation Law	3	PL-1490	Worker's Compensation Law	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
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
ESCI-1410	Physical Geology	3	ESCI-141H	Honors Physical Geology	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-1540	Trigonometry	4	MATH-154H	Honors Trigonometry	4
MATH-1530	College Algebra	4	MATH-153H	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	3	PSY-201H	Honors Child Growth and Development	3
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 VI: 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-1010	Shop Safety and Lab Procedures	1
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
AUTO-2600	Hybrids and Alternative Fuel Systems	3
BADM-1060	Leadership Seminar	1
BADM-2020	Leadership Theory	3
BADM-2030	Management Development	3
BADM-2040	Strategic Leadership	3
BADM-2230	Value Analysis	3
BADM-2290	Urban Agribusiness Management	3
BADM-2420	CPS Review: Management, Finance and Business Law	3

DELETED COURSE WITH NO EQUIVALENCY		CR.
C&CR-1610	Speed Development I	1
C&CR-1620	Speed Development II	1
C&CR-1630	Speed Development III	1
C&CR-2651	Technical Terminology II	3
CNST-1420	Architectural CAD II	3
CNST-2360	Energy Auditing & Weatherization	3
CNST-2420	Sustainable Design & Supervision	3
DAST-1200	Oral Structures	3
DAST-1300	Dental Assisting Methods	3
DAST-1310	Dental Assisting Radiology	3
DAST-1320	Dental Office Management	3
DAST-1330	Reimbursement for Dental Services	3
DAST-1400	Dental Assisting Methods II	3
DAST-1410	Dental Assisting Radiography II	2
DAST-1420	Current Concepts for the Dental Assistant	1
DAST-1850	Practicum	2
DIET-1150	Nutrition for Children and Families	2
DIET-1340	Health Food Exploration	2
DMS-1260	Pediatric Cardiovascular Anatomy, Physiology, and Assessment	2
DMS-2000	Sonographic Case Studies	1
DMS-2370	Advanced Sonographic Physical Principles and Flows	3
DMS-2921	Directed Practice III	3
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
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-2140	Digital Circuits/Microprocessors 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
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

Appendix VI: Equivalent Courses

DELETED COURSE WITH NO EQUIVALENCY		CR.
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
INTD-2350	Textiles	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
ITNT-2440	Netware Administration II	3
ITWM-2990	E-Commerce Technologies	3
JMC-1020	Introduction to Mass Communications II	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

DELETED COURSE WITH NO EQUIVALENCY		CR.
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
NURS-2400	Health Management	1
PNUR-1310	Fundamentals of Nursing	4
PNUR-1320	Nursing Management of Adults I	4
PNUR-1340	Nursing Care of Families	4
PST-1500	Basic Landscape Contracting	3
PST-2200	Advanced Landscape Contracting	3
PST-2330	Entomology	3
PST-2340	Plant Pathology	3
PST-2360	Plant Pathology	3
PST-2440	Design IV – Advanced Landscape Design	3
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
RESP-1410	Beginning Polysomnography	2
RESP-1421	Intermediate Polysomnography I	2
RESP-142L	Intermediate Polysomnography I-Lab	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

Appendix VI: Equivalent Courses

DELETED COURSE WITH NO EQUIVALENCY		CR.
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
VCDV-2580	Digital Versatile Disk (DVD) Authoring and Design	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
VCPH-1050	Black and White Photography I	3
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 VII

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

KUNTZ, DAVID
*Executive Vice President/Treasurer
Administration & Finance*
A.A.B., Cuyahoga Community College
B.B.A., Baldwin-Wallace College

VACANT
*Executive Vice President & Provost, Access,
Learning & Success*

GARY, SR., WILLIAM
*Executive Vice President,
Workforce, Community, & Economic
Development*
B.A., Morehouse College
M.A., Rutgers 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

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

IMHOFF, DONNA
*Campus President,
Vice President, Western Campus*
B.S., Penn State University
M.S. Ed., Duquesne University
Ph.D., University of Pittsburgh

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

BOOKER, ALICIA
*Vice President, Operations &
Manufacturing*
B.A., DePaul University
M.S., Central Michigan University

HARRIS, CLAYTON
*Vice President & Dean, Public Safety &
Security*
B.A., Ohio University

HOOVLER, DAVID
Vice President, Integrated Communications
B.A., Asbury University
M.A., Wheaton College

HOIRIGAN, GERARD
*Vice President, CIO Information
Technology Services*
B.A., Madonna University
M.S., Central Michigan University

LEITSON, CYNTHIA
*Vice President, Facilities Development &
Operations*
B.A., Michigan State University

McMULLEN, JUDITH
*Vice President, Chief Human Resources
Officer*
B.A., Baldwin Wallace College
M.B.A., Ashland University

MILLER, KAREN
*Vice President, Institutional Research &
Enrollment Management*
B.S., University of Akron
M.S., University of Akron
Ph.D., University of Toledo

O'BRYAN, MEGAN
*Vice President, Development Office &
Tri-C Foundation*
B.A., The Catholic University of
America
M.B.A., Case Western Reserve
University

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

WILLIAMS, LISA
Vice President, Learning & Engagement
B.S., University of Akron
M.S., University of Akron

Associate Vice Presidents

ENGLISH, LINDSAY
*Assoc. Vice President, Academic
Professional Development & Assessment*
B.S., The Ohio State University
M.B.A., Kent State University
Ph.D., University of Toledo

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

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

COON, SHARON
Executive Director, Development
B.A, Hiram College
M.B.A., Lake Erie College

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

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

JACKSON, ANTHONY
Executive Director, Emergency Fire and Safety Systems
A.A., Cuyahoga Community College
B.A., Myers 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

HILBERT, STEPHEN
Executive Director, Supplier Managed Services
B.S., John Carroll University
M.B.A., Baldwin-Wallace College

KEMP, THOMAS
Executive Director, Online Learning & Academic Technology
B.A., University of Akron
M.A., University of Akron

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

PINNEY, AMANDA
Executive Director, Development & Engagement
B.A., Mount Union College
J.D., Case Western Reserve 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

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

STINEMAN, SHIRLEY
Executive Director, Workforce Communication & Community Outreach
B.A., Baldwin Wallace University
M.A., Cleveland State University

STUART, GLEN
Executive Director, Evidence & Inquiry
B.A., Case Western Reserve University
M.P.A., The Ohio 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 University
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

DULL, CHARLES
Assoc. Dean, Information Technology
A.A., Kent State University
B.A., Youngstown State University
M.B.A., Youngstown State University
Ph.D., Capella University

VACANT
Assoc. Dean, Nursing

MIKUSZEWSKI, BARBARA
Assoc. Dean, Health Careers & Sciences
 B.S., Plattsburg State University of N.Y.
 M.S., University of Massachusetts

WILSON, MONIQUE
Dean & Executive Director, Information Technology Training
 B.B.A., Middle Tennessee State University
 M.S., Middle Tennessee State University
 Ph.D., University of Maryland

WONG, LAM
Dean, Manufacturing & 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

VACANT
Assoc. Dean, Health Careers & Sciences

HARTLEY, LORRAINE
Assoc. Dean, Business, Math & Technology
 B.A., California University of Pennsylvania
 M.S., California University of Pennsylvania
 D.B.A., Nova Southeastern University

HUFF, MICHAEL
Dean/General Manager, Hospitality Management
 B.S., Arizona State University
 M.B.A., Arizona State University

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- HEER, SUNITA
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B.A., Baldwin Wallace College
M.A., Cleveland State University
- HEIDENREICH, JAMES
Asst. Professor, Electrical/Electronic Engineering Technology
A.S., Cuyahoga Community College
B.S.T., Cleveland State University
M.C.I.S., Cleveland State University
- HEINLEN, KATHLEEN
Assoc. Professor, Counseling
B.A., Indiana University
M.Ed., Cleveland State University
Ph.D., Cleveland State University
- HENDRICK, ROBERTA
Assoc. Professor, English as a Second Language
B.A., University of Illinois
Ph.D., University of Chicago
- HILEY, DEREK
Asst. Professor, Mathematics
B.S., University of Toledo
M.A., University of Toledo
- HILL, KIMBERLY
Asst. Professor, English
B.A., Cleveland State University
M.A., Kent State University
- HNAT, MARGARET
Asst. Professor, English
B.A., California State University
M.A., Cleveland State University
- HOLLAND, CYNTHIA
Professor, Psychology
B.A., Case Western Reserve University
M.A., Case Western Reserve University
Ph.D., Case Western Reserve University
- HOLLOWELL, SR., MIEKEL
Asst. Professor, Information Technology
A.A., University of Toledo
B.S., Baldwin Wallace College
M.S., University of Phoenix
- HOLSWORTH, JR., RICHARD
Asst. Professor, Music
B.M., Berklee College of Music
M.M., Cleveland State University
- HORTON, MARY JANE
Professor, Philosophy/Religious Studies
B.A., Baldwin Wallace College
M.A., Cleveland State University
M.A., Ashland Theological Seminary
- HOVANEK, MARY
Professor, History
B.A., Case Western Reserve University
M.A., University of Chicago
- HREPIC, SILVANA
Assoc. Professor, Foreign Language
B.A., Cleveland State University
M.A., Cleveland State University
- HROVAT, JENNIFER
Asst. Professor, Counseling
B.A., Denison University
M.A., John Carroll University
- HUANG, WEI
Professor, Counseling
B.A., Guangxi Institute for Nationalities, China
M.Ed., Millersville University
Ph.D., Kent State University
- HUGHLEY, JR., EMANUEL
Asst. Professor, English/Journalism
B.S., Ohio University
M.S., Columbia University
- I**
- INDRIOLO, LEILA
Asst. Professor, Counseling
B.A., University of Toledo
M.S.S.A., Case Western Reserve University
- J**
- JACKSON, MARK
Asst. Professor, Spanish
B.A., Oakland University
M.A., Wayne State University
- JAHAMI, YASSER
Assoc. Professor, Radiography
A.S., Cuyahoga Community College
- JENKINS, CATHLEEN
Professor, Biology
B.S., University of Akron
M.S., University of Akron
- JENNINGS, PETER
Asst. Professor, Library
B.A., Cleveland State University
M.L.S., Kent State University
- JIMISON, DONNA
Assoc. Professor, Medical Assisting
A.D.N., Gadsden Community College
M.S.N., Case Western Reserve University
- JOHNSON, BRIAN
Asst. Professor, Humanities
B.A., California State University
M.A., California State University
Ph.D., University of Massachusetts
- JOHNSON, CLARENCE
Professor, Mathematics
B.S., Case Western Reserve University
M.S., Cleveland State University
Ph.D., Cleveland State University
- JOHNSON, EMHONTA
Asst. Professor, Biology
B.S., University of Toledo
Ph.D., University of Toledo

Appendix VII: Employees

JOHNSON, ROBERT
Assoc. Professor, Counseling
B.A., Kent State University
M.Ed., Kent State University
Ph.D., Capella University

JONES, DAVID
Asst. Professor, Physical Education
B.Ed., University of Queensland
M.Ed., University of Queensland

JUKIEWICZ, DENISE
Asst. Professor, Nursing
A.S.N., Kent State University
B.S.N., Kent State University
M.S.N., Kent State University

K.

KAMEL, HAIDY
Assoc. Professor, Chemistry
B.A., Suez Canal University
Ph.D., University of Mississippi

KANGAS, SHIRLEY
Professor, Biology
B.S., Kent State University
M.S., John Carroll University

KANIESKI, GEORGE
Asst. Professor, English
B.S., John Carroll University
M.A., John Carroll University

KARAC, MIRA
Asst. Professor, Mathematics
B.S., University of Akron
M.S., University of Akron

KASCHUBE, CURTIS
Asst. Professor, Mathematics
B.A., Cleveland State University
M.A., Kent State University

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Asst. Professor, English as a Second Language
B.A., University of Delaware
M.A., University of Delaware

KAZMIER, RACHEL
Asst. Professor, English
B.A., California State University of Fullerton
M.A., California State University of Fullerton

KELLEY, COURTNEY
Assoc. Professor, Psychology
B.A., Wittenberg University
M.A., Bowling Green State University
Ph.D., Bowling Green State University

KELLY, ROBIN
Asst. Professor, Marketing/Business Administration
B.A., Bradley University
M.B.A., American Graduate School of International Management
Ph.D. International School of Management (France)

KENNEY, MICHAEL
Asst. Professor, Chemistry
B.S., St. John's University
M.S., The George Washington University
Ph.D., Iowa State University

KEREZY, JOHN
Assoc. Professor, Journalism/Mass. Comm.
B.A., Wabash College
M.A., The Ohio State University

KINSELLA, CHRISTOPHER
Asst. Professor, History
B.A., Saint Xavier University
M.A., DePaul University

KOCH, JOSEPH
Asst. Professor, Biology
B.S., Waynesburg University
M.S., Indiana University of Pennsylvania

KOMARA, LINDA
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A.A.S., Lakeland Community College
B.S., Ursuline College
M.S., Walden University

KONDIK, KEVIN
Asst. Professor, Philosophy
B.S., Cleveland State University
M.S., Ohio University

KOVACIC, DIANA
Asst. Professor, Nursing
B.S.N., Case Western Reserve University
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A.B., University of Michigan
M.A., Case Western Reserve University
Ph.D., The Ohio State University

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Assoc. Professor, Captioning and Court Reporting
A.A., Academy of Court Reporting
B.S., Empire State College
M.Ed., Grand Canyon University

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B.A., University of Akron
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 M.F.A., Vermont College

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 B.S., Chernovits State University, USSR
 M.A., Chernovits State University, USSR
 M.S., Chernovits State University, USSR
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Appendix VII: Employees

MEIMARIS, MAUREEN

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B.S., Malone College
M.S., Walden University

MELNICK, DAVID

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M.A., Cleveland State University

MENSAH, ANGELA

Asst. Professor, Speech Communications
A.A., Delta College
B.S., Ferris State University
M.S., Western Michigan University
Ph.D., Bowling Green State University

MEOLA, SUZANNE

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B.F.A., University of Akron

MERICSKO, ATHENA

Asst. Professor, English
B.A., Mount Union College
M.A., Cleveland State University

MIKLOWSKI, PAUL

Asst. Professor, Art
B.A., Borromeo College of Ohio
M.A., Cleveland State University

MIKUSZEWSKI ANDREW

Asst. Professor, Hospitality Management
A.A., Culinary Institute of America
B.A., University of Massachusetts
M.A., University of Massachusetts

MILAM, LINDSAY

Asst. Professor, English
B.A., Baldwin-Wallace College
M.A., University of Toledo

MILLER, JUSTIN

Asst. Professor, Philosophy
B.S., Portland State University
M.A., Cleveland State University

MORGENSTEIN, BENJAMIN

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B.A., University of Michigan
M.A., University of Tennessee

MORGENSTEIN, SARAH

Asst. Professor, Visual Communications & Design
A.A.B., Cuyahoga Community College
B.S., Cleveland State University

MOTLEY, DEBRA

Asst. Professor, American Sign Language
B.A., Cleveland State University
M.Ed., Western Maryland College

MUN, SEONG-AE

Assoc. Professor, Art
B.F.A., Ewha Womans University
M.F.A., Rhode Island School of Design

N.....

NAGORNEY, SUSAN

Asst. Professor, Mathematics
B.S., Case Western Reserve University
M.A., Cleveland State University

NAGY, MARGUERITE

Asst. Professor, Accounting
B.A., Notre Dame College
B.A., Baldwin-Wallace College
M.A., University of Akron
M.B.A., Baldwin-Wallace College

NARDECCHIA, DAVID

Asst. Professor, Counseling
B.A., Kent State University
M.Ed., Kent State University

NDEFRU, JOHN

Asst. Professor, Physics
Candidat en Sciences Physiques,
Universite Lovanium, Kinshasa, Zaire
Candidat en Sciences Mathematiques,
Universite Lovanium, Kinshasa, Zaire
Licence en Sciences Physiques,
Universite Lovanium, Kinshasa, Zaire
Ph.D., Indiana University

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B.A., Towson University
M.A., Case Western Reserve University
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NELSON, AMY

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B.S.N., University of Toledo
M.S.N., Walden University

NICKENS, SHAWN

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B.A., College of Wooster
M.S.S.A., Case Western Reserve
University

NICOPOLIS, MICHELLE

Professor, Counseling
B.A., Hiram College
M.A., Ball State University
Ph.D., Cleveland State University

NYE, SHAD

Asst. Professor, Physical Education
B.A., Baldwin-Wallace College
M.Ed., Cleveland State University

O.....

OCHEI, CHRISTIAN

Asst. Professor, Manufacturing
Adv. Dipl. Tech. Institute, Germany
B.S., Norfolk State University
M.S., Central Missouri State University

OCHS, KIMBERLY

Asst. Professor, Biology
B.S., Clarion University
M.S., Virginia Commonwealth

OKOCHA, CHRISTIE

Professor, English
B.Ed., University of Ibadan, Nigeria
M.A., Cleveland State University
J.D., Cleveland Marshall College of
Law

ORR, TRACY

Assoc. Professor, Information Technology
A.S., Cuyahoga Community College
B.S., Dyke College
M.Ed., Cleveland State University

OSBORN, STACI

Asst. Professor, Mathematics
B.A., Lake Superior State University
M.A., Western Michigan University

OSTROSKE, JOHN

Asst. Professor, Information Technology
B.S., Cleveland State University
M.B.A., Case Western University

OVERFIELD, DANIEL

Asst. Professor, Library
B.A., Ohio University
M.S., Drexel University

P.....

PACK, DANNY

*Assoc. Professor, Electrical/Electronic
Engineering Technology*
B.S.E.T., Cleveland State University
M.S.I.E., Cleveland State University
M.S.E.E., Cleveland State University

PANZA, JOHN

Asst. Professor, English
B.A., John Carroll University
M.A., John Carroll University

PARAMESWARAN, VANITHA

Assoc. Professor, Mathematics
B.A., Bharathiar University
M.A., Avinashilingam Deemed
University
M.A.P., Avinashilingam Deemed
University

PATWARDHAN, PAT
Assoc. Professor, Business Administration
 B.A., University of Pune
 B.A., Eureka College
 M.S., Illinois State University

PECK, ANDREA
Asst. Professor, Speech Communications
 B.A., University of Michigan
 M.A., Kent State University

PERRY, FREDERICK
Professor, Theatre/Television
 B.A., University of California
 M.A., University of Arizona
 Ph.D., University of Colorado

PETCAVAGE, SHEILA D.
Assoc. Professor, Business Administration
 B.A., Baldwin-Wallace College
 M.B.A., Baldwin-Wallace College

PHILLIPS, CHRISTINE
Asst. Professor, Physical Education
 B.S., Kent State University
 M.Ed., Cleveland State University

PICKENS, TONISHA
Asst. Professor, Counseling
 B.A., Ohio University
 M.Ed., Ohio University

PICKETT, MICHELE
Assoc. Professor, Business Administration
 B.S., Case Western Reserve University
 M.B.A., Northeastern University
 Ph.D., Capella University

PIERCE, MATTHEW
Asst. Professor, English as a Second Language
 B.S., Florida International University
 M.S., Florida International University
 Ed.D., Florida International University

PIERO, MIKE
Asst. Professor, English
 A.A., Cuyahoga Community College
 B.A., The University of Akron
 M.A., John Carroll University

POSEY, SAMANTHA
Asst. Professor, Counseling
 B.S., Bowling Green State University
 M.S., Kent State University
 Ph.D., University of Akron

POWERS, TRISTA
Asst. Professor, English
 B.A., Mount Union College
 M.A., Carnegie Mellon University

PRESTON, WILLIAM
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 B.S., John Carroll University
 M.S., John Carroll University

PRIMUTH, ERIC
Assoc. Professor, Accounting
 B.B.A., Cleveland State University
 M.S.A., Kent State University
 M.B.A., Kent State University

R.

RANKINS, MICHELLE
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 B.A., Kent State University
 M.A., Cleveland State University

RASEL, JOHN
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 B.A., West Virginia Wesleyan College
 M.A., Eastern Illinois University
 M.L.I.S., Kent State University

REDLES, DAVID
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 B.A., Penn State University
 M.A., Penn State University
 Ph.D., Penn State University

REED, JOHNIE
Asst. Professor, Business Administration
 A.A., Cuyahoga Community College
 A.A.B., Cuyahoga Community College
 B.B.A., Tiffin University
 M.S., Case Western Reserve University
 M.Ed., Cleveland State University

REED, TIFFANIE
Asst. Professor, Sociology
 B.A., Cleveland State University
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RELYEA, AMY
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 B.S., Miami University
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REYES, SUZANNE
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RIFFLE, LISA
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 B.S., University of Akron
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 M.S., Virginia Polytechnic Institute

RILEY, TABBY
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 B.S., University of Akron
 M.S., Walden University

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 M.A., Iowa State University
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 B.S., John Carroll University
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 B.S., Taylor University
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Appendix VII: Employees

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B.S., Ohio Northern University
Pharm.D., Ohio Northern University

RYLAND, MARK
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Technology
B.S., Kent State University
M.A., Kent State University

S.....

SANDERS, DESIREE
Asst. Professor, Nursing
A.A., Huron School of Nursing
B.S., University of Akron
M.S., Walden University
M.A., Indiana Wesleyan

SCALONE, JANIS
Assoc. Professor, English as a Second
Language
B.A., Penn State University
B.S., Slippery Rock University
M.Ed., University of Pittsburgh

SCHAFER, TED
Assoc. Professor, Automotive Technology
A.A.S., Cuyahoga Community College

SCHLUETER, LUKE
Asst. Professor, English
B.A., Franciscan University
Steubenville
M.A., University of Dallas
Ph.D., Kent State University

SCOTT, GARY
Asst. Professor, Music
B.A., University of Tulsa
M.M., University of Tulsa

SEATON, KIRA
Asst. Professor, Music
B.M., Ohio University
M.M., Ohio University

SEBOLD, D. DAVID
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Engineering Technology
B.A., Cleveland State University

SHARMA, PRABHAT
Asst. Professor, Massotherapy/Biology
B.S., University of Delhi
M.S., Jiwaji University
M.D., Our Lady of Fatima
Ph.D., Jiwaji University

SHEARER, MELANIE
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A.S., Ohio College of Massotherapy
B.S., Kent State University
M.S., Cleveland State University

SHELTON, PATTY
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B.S., Ursuline College
M.S., University of Akron

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B.S., University of Florida
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M.A.T., University of Florida

SHIRILLA, ROBERT
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M.A., University of Akron

SIEGEL, DEBRA
Asst. Professor, Nursing
B.S.N., University of Cincinnati
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SIERK, DAVID
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M.B.A., Washington University
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B.B.A., Kent State University
M.S., University of Akron

SLATER, MICHELLE
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B.S.N., University of Akron
M.S.N., University of Akron

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B.S., The Ohio State University

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Professor, Mathematics
B. Phil., Miami University
M.A., Tufts University
M.A., Kent State University
Ph.D., Kent State University

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B.A., University of California-Irvine
M.A., University of Wisconsin-
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B.A., Cleveland State University
M.A., Cleveland State University

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M.S., University of Akron
M.A., Kent State University

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Ph.D., Cleveland State University

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 M.S., NOVA Southeastern University

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 B.A., Cleveland State University
 M.F.A., Chapman University

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 M.P.A., Bowling Green State University
 M.A., Kent State University

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 M.S., University of Akron

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 A.S., Cuyahoga Community College
 B.S., Cleveland State University
 M.S., Cleveland State University
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 M.S.N., Chamberlain College

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 B.S., John Carroll University
 M.B.A., University of Phoenix

WALTON, DOTTIE
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 M.S., Middle Tennessee State
 University

WARD, MARY
Asst. Professor, English
 B.S., Kent State University
 M.A., Kent State University

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 B.S., University of Florida
 M.A., University of Florida

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 M.S., The Ohio State University

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 B.A., Case Western Reserve University
 M.A., Cleveland State University

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Assoc. Professor, Visual Communication & Design
B.F.A., Cleveland Institute of Art
M.F.A., Maine College of Arts

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Asst. Professor, Counseling
A.A., Ashland Theological Seminary
M.S., Ashland Theological Seminary

WEGLIAN, EMILY
Professor, Anthropology
B.A., Miami University
M.A., University of Minnesota
Ph.D., University of Minnesota

WEISFELD, MATT
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B.S., Miami University
M.S., Bowling Green State University
M.B.A., Baldwin-Wallace College

WEISSMAN, NANCY
Professor, Library
B.S., The Ohio State University
M.L.S., Kent State University

WHETSEL, WILLIAM
Asst. Professor, Visual Communication & Design
B.F.A., University of Cincinnati

WHITE, DANITA
Asst. Professor, English
B.S., Our Lady of the Lake University
M.S., Newman University

WHITE, ROBYN
Assoc. Professor, Sociology
B.A., University of Arkansas
M.A., University of Arkansas

WICKLEY, PETER
Assoc. Professor, Biology
B.S., Grand Valley State University
Ph.D., Kent State University
Ph.D., Michigan State University

WILKINS, MICHAEL
Assoc. Professor, Mathematics
B.S., John Carroll University
M.S., Baldwin Wallace College
M.S., Ohio University

WILLIAMS, CASSANDRA
Asst. Professor, Counseling
B.S., Bowling Green University
M.S., Cleveland State University
Ph.D., Kent State University

WILLIAMS, DERRICK
Asst. Professor, Speech Communications
B.A., Upper Iowa University
M.A., University of Northern Iowa
Ph.D., Southern Illinois University

WILLIAMS, ERICK
Asst. Professor, Mathematics
B.S., Youngstown State University
M.S., Youngstown State University

WILLIAMS, JONATHAN
Asst. Professor, Physics
B.S., University of Alabama
M.S., University of Alabama
Ph.D., University of Alabama

WILLIAMS, KENNETH
Asst. Professor, Massotherapy
B.A., Kent State University
Ph.D., Life University

WILLIAMS, TODD
Asst. Professor, Business Administration
B.S.B.A., University of Akron
M.B.A., University of Akron

WILLIAMSON, GAYLE
Assoc. Professor, English
B.A., Adrian College
M.F.A., Bowling Green State University

WILSON, DEBRA
Asst. Professor, Nursing
B.S.N., Ursuline University
M.S.N., University of Phoenix

WILSON, KENNETH
Asst. Professor, English
B.S., Slippery Rock University
M.A., Slippery Rock University

WINDAHL, KIRSTEN
Asst. Professor, English as a Second Language
B.A., University of Michigan
M.A., Cleveland State University

WINSTON, BARBARA
Assoc. Professor, Counseling
B.A., Bowling Green State University
M.Ed., Cleveland State University

WOLKEN, CHRISTINE
Assoc. 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
Asst. Professor, English
A.A., William Rainey Harper College
B.A., University of Iowa
M.A., University of Cincinnati

YOUNG, JR., HENRY
Assoc. Professor, Speech Communications
A.A., Cuyahoga Community College
B.S., Cleveland State University
M.A., Cleveland State University

YUNKER, ANNE MARIE
Assoc. Professor, Biology
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Ph.D., Michigan State University

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ZAGATA, MELISSA
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M.A., John Carroll University

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Assoc. Professor, Counseling
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

ZEHNDER, CARA
Asst. Professor, Nursing
B.S.N., Kent State University
M.S.N., Kent State 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 VIII: 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: Parking Permits are required to park in spaces designated for Faculty and Staff.

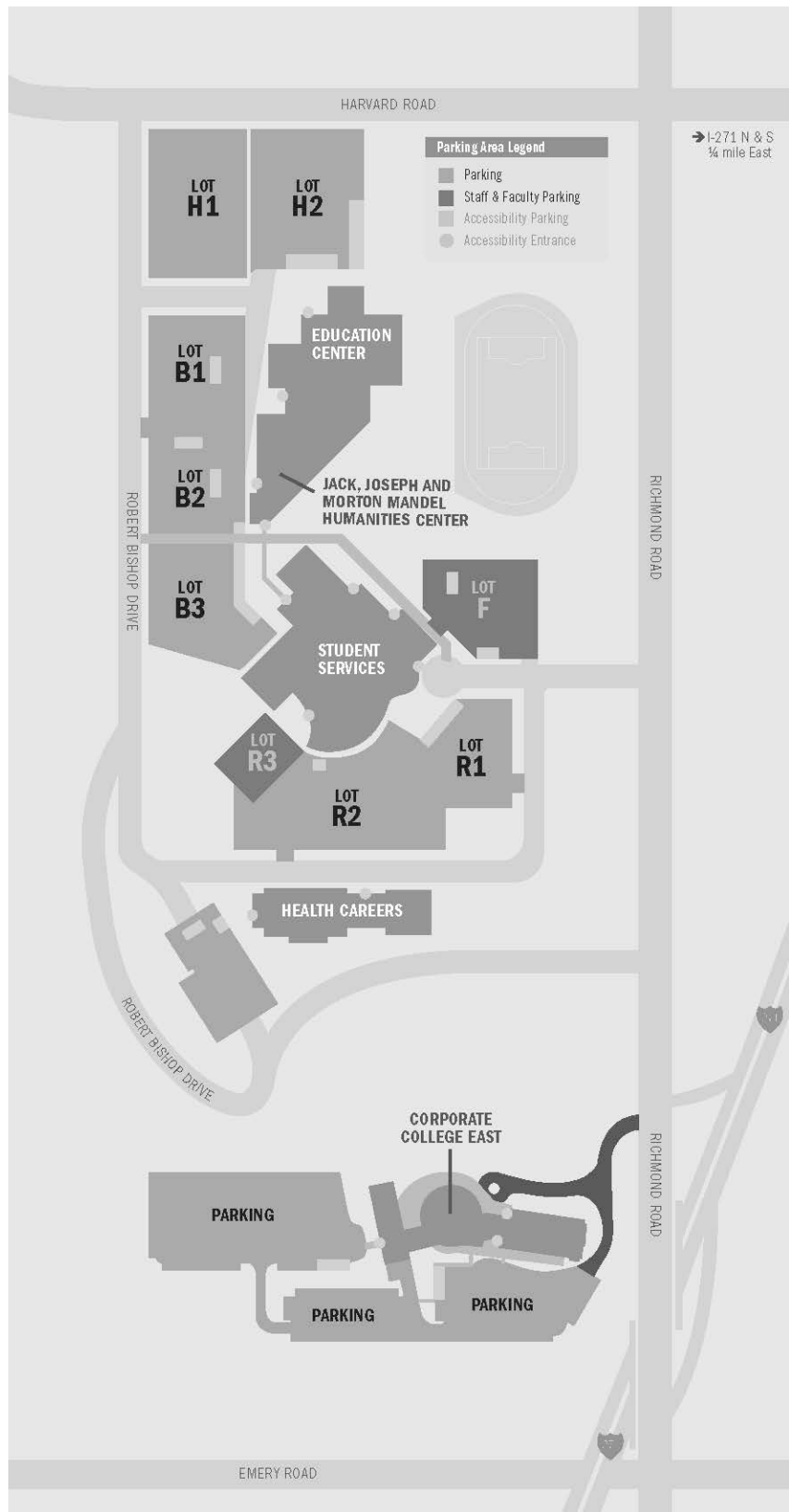
Motorists traveling south on I-271 should take the Harvard Road exit (Exit 28B). Turn right off the exit ramp and travel west on Harvard (about a quarter mile) to Richmond Road. Turn left on Richmond Road and travel south (about a quarter mile). The Eastern Campus entrance will appear on your right.

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 RTAnswerline at 216-621-9500.



Metropolitan Campus

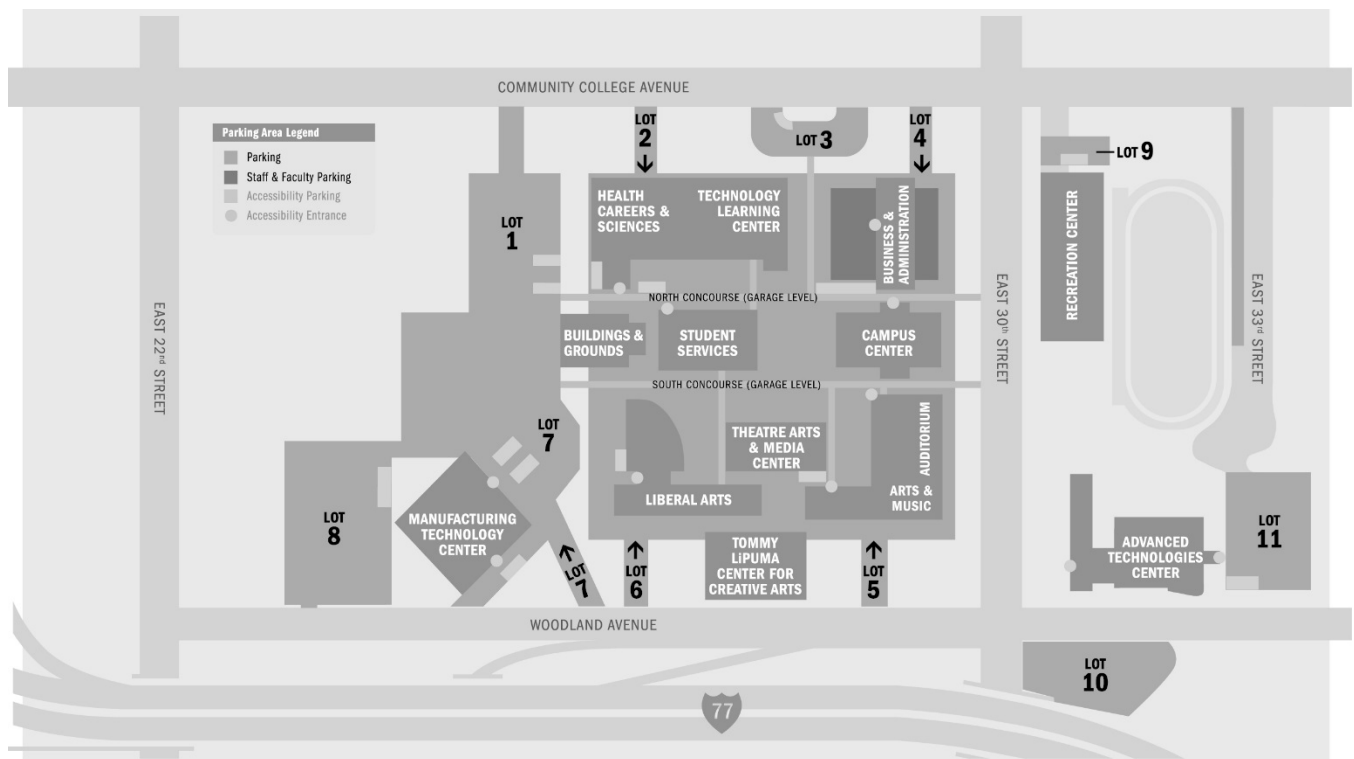
2900 Community College Avenue
Cleveland, OH 44115-3196

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: Parking Permits are required to park in spaces designated for Faculty and Staff.

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.



Appendix VIII: Campus Maps and Directions

Western Campus

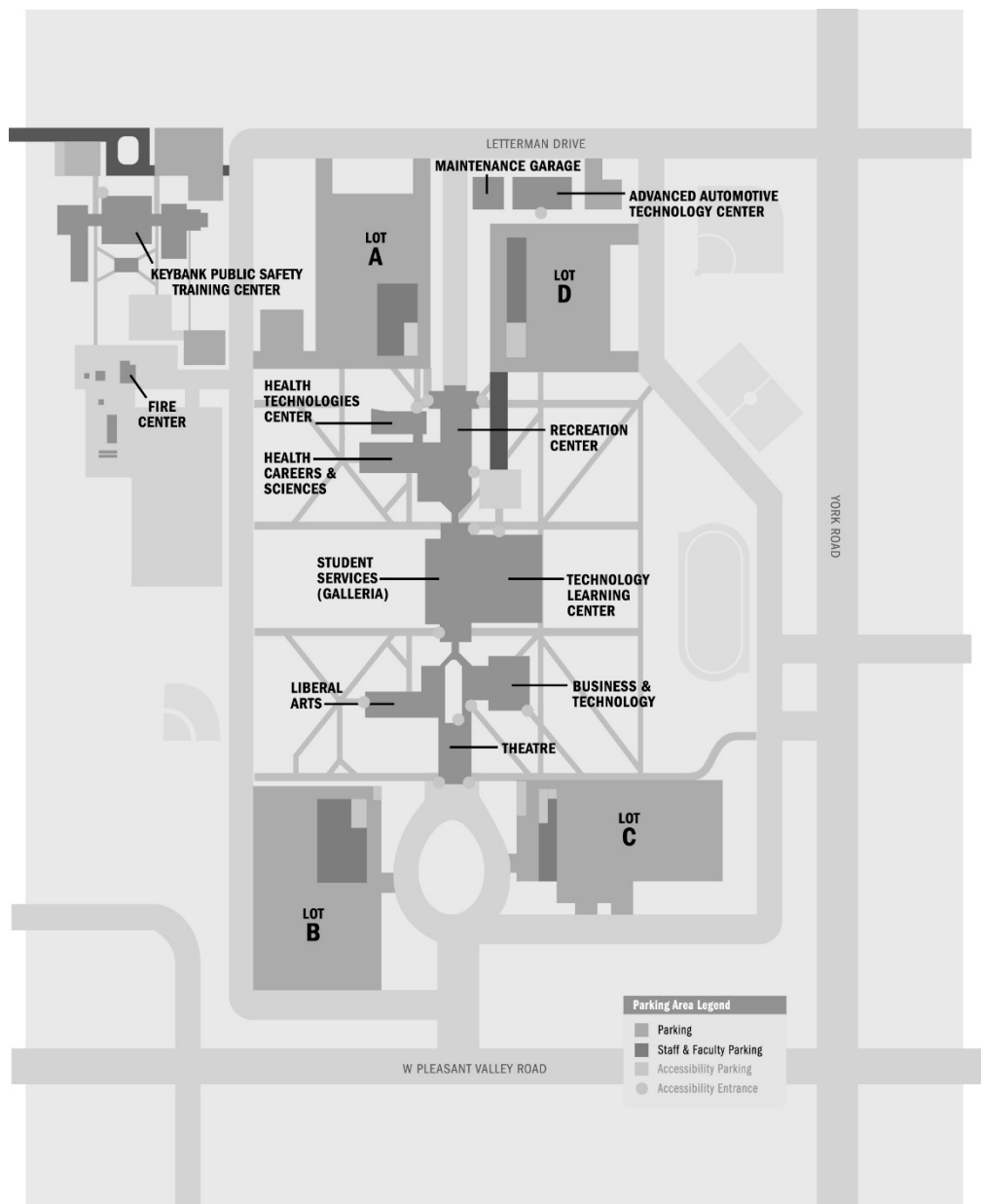
11000 Pleasant Valley Road
Parma, OH 44130-5199

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: Parking Permits are required to park in spaces designated for Faculty and Staff.

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

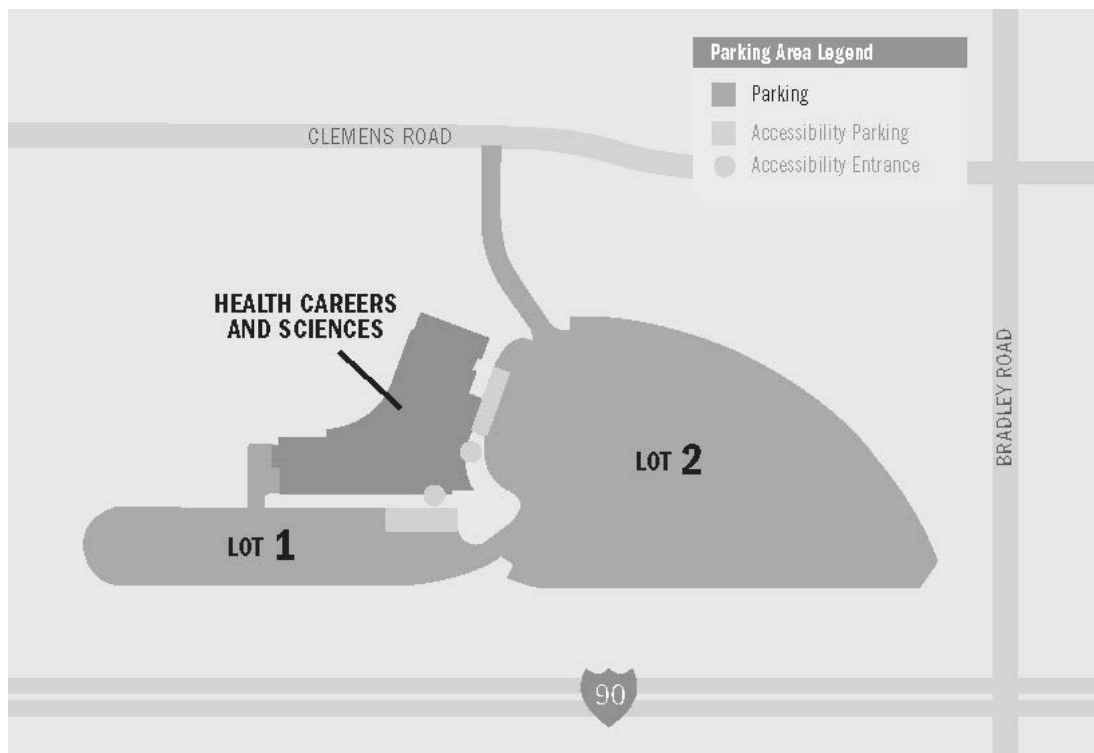
From the West:

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: Parking Permits are required to park in spaces designated for Faculty and Staff.



Manufacturing Technology Center (MTC)/WCED

2415 Woodland Avenue
 Cleveland, OH 44115-3239

Advanced Technology Training Center (ATTC)/WCED

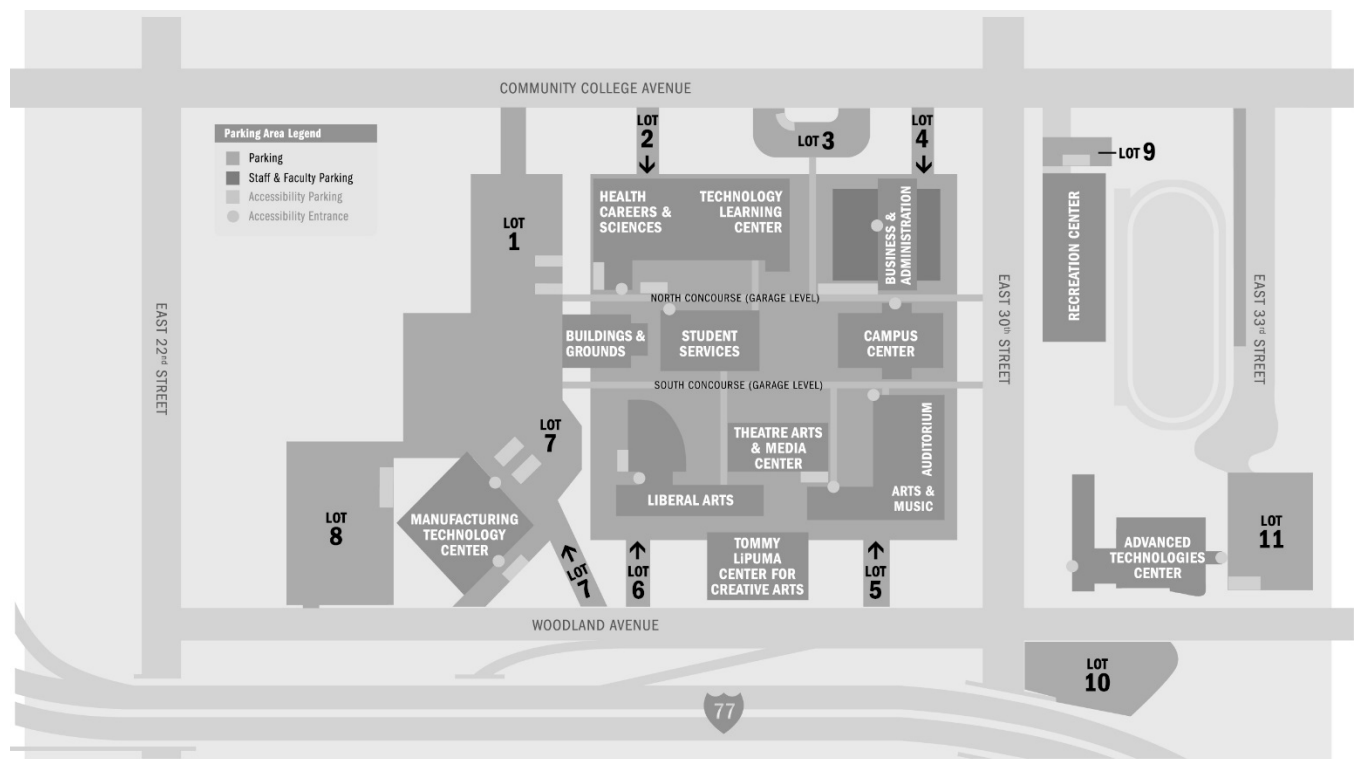
3409 Woodland Avenue
 Cleveland, OH 44115-3239

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: Parking Permits are required to park in spaces designated for Faculty and Staff.

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

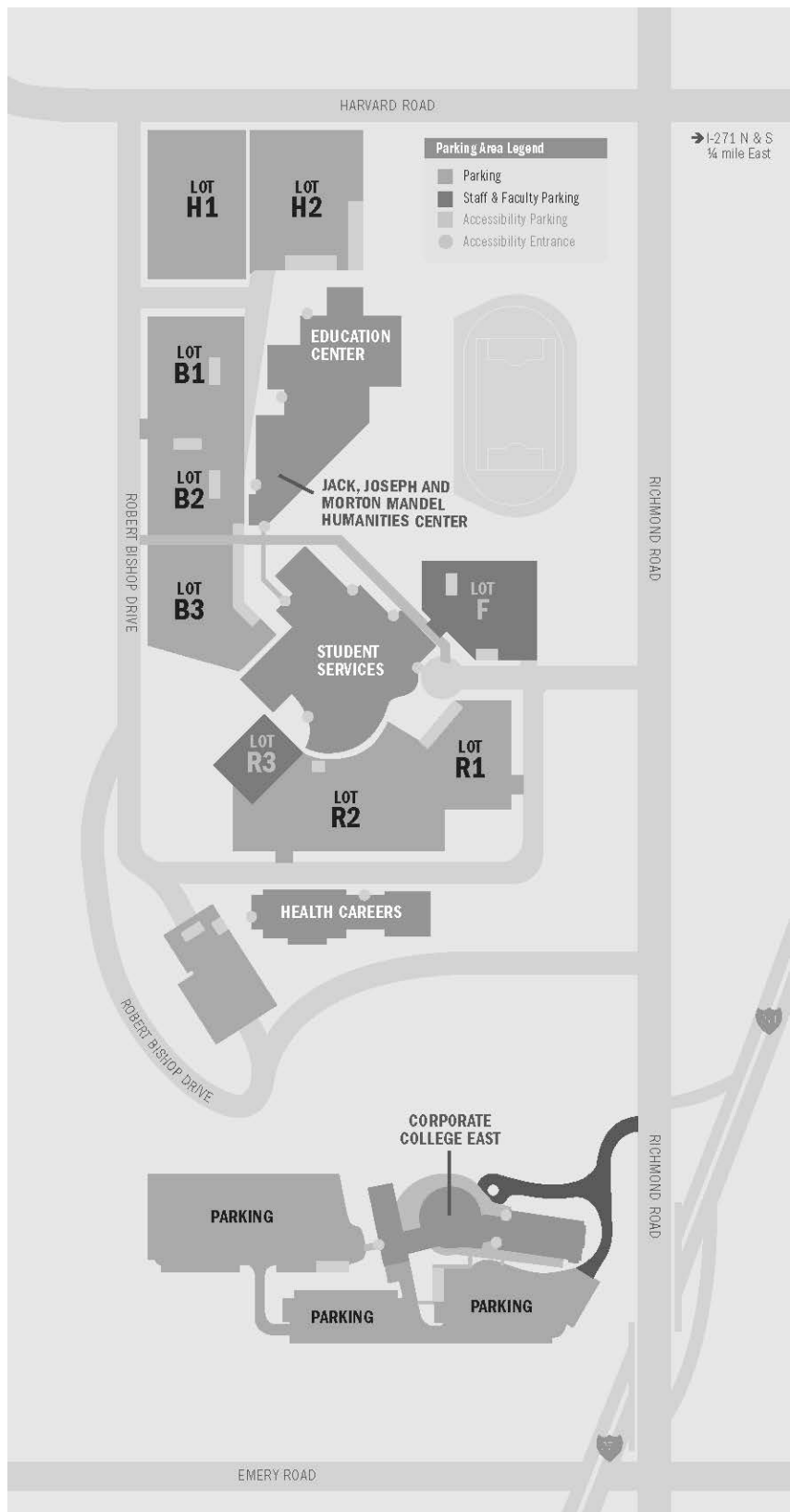
4400 Richmond Road
Warrensville, OH 44128

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 RTAnswerline at 216-621-9500.



Corporate College® West

25425 Center Ridge Road
Westlake, OH 44145

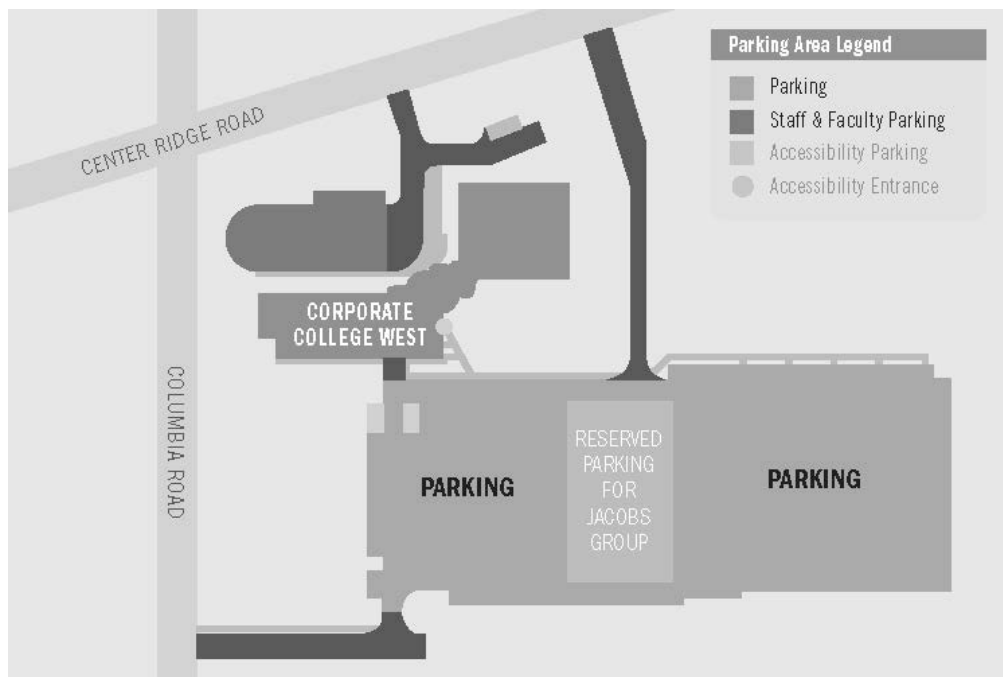
By automobile:

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: Parking Permits are required to park in spaces designated for Faculty and Staff.

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

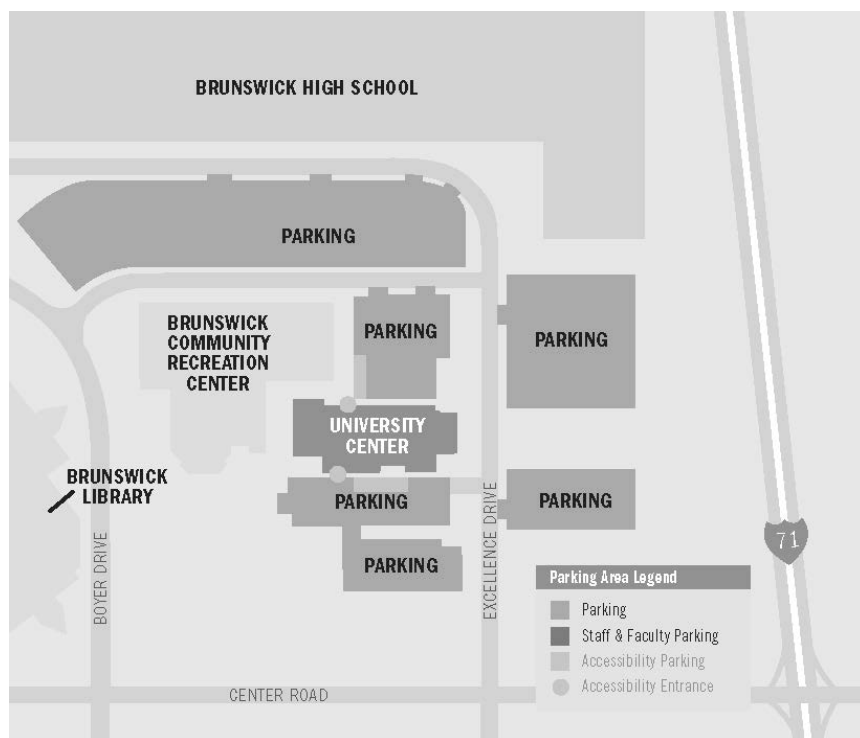
3605 Center Road
Brunswick, Ohio 44212

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: Parking Permits are required to park in spaces designated for Faculty and Staff.

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.



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