Lakeland Community College

Catalog
2015/2016

Lakeland
COMMUNITY COLLEGE

Accreditation

Lakeland Community College is accredited through the Higher Learning Commission (HLC) and participates in the Academic Quality Improvement Program (AQIP). The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604-1413 phone: 800.621.7440, hlcommission.org

Specific program accreditations include:

Dental Hygiene - Commission on Dental Accreditation - American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611-2678, phone: 312.440.2500

Early Childhood Education - NAEYC Early Childhood Associate Degree Accreditation

Emergency Management Planning and Administration - International Fire Service Accreditation Congress (IFSAC)

Emergency Medical Technology - Ohio Department of Public Safety, P.O. Box 182073-1970, West Broad St., Columbus, OH 43218

Fire Science Technology - International Fire Service Accreditation Congress (IFSAC)

Health Information Management Technology - Commission on Accreditation for Health Informatics and Information Management (CAHIM), 233 N. Michigan Ave. 21st Floor, Chicago, Il 60601-5519, phone: 312.233.1100.

Histotechnology - National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119, phone: 773.714.8880. Accreditation in progress

Medical Assisting - The Lakeland Community College Medical Assisting Certificate Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB). Commission on Accreditation of Allied Health Education Programs, 1361 Park Street, Clearwater, FL 33756, phone: 727.210.2350.

Medical Laboratory Technology - National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119, phone: 773.714.8880.

Paralegal Studies Program - Approved by the American Bar Association

Radiologic Technology - JRCERT - Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182, phone: 312.704.5300, email: mail@jrcert.org

Registered Nursing - Approved by Ohio Board of Nursing, 17 S. High St., Columbus, OH 43215, phone: 614.466.3947, and accredited by the Accreditation Commission for Education in Nursing, 3343 Peachtree Road, N.E., Suite 850, Atlanta, GA 30326, phone 404.975.5000.

Respiratory Therapy - The Respiratory Therapy Program is accredited by the Commision on Accreditation for Respiratory Care (www.coarc.com). Commission on Accreditation for Respiratory Care, 1248 Harwood Road, Bedford, Texas 76021-4244, phone: 817.283.2835.

Surgical Technology - The Lakeland Community College Surgical Technology Program is accredited by the Commission of Accreditation of Allied Health Education Programs (www.caahep.org), 1361 Park St., Clearwater, FL 33756, phone: 727.210.2350, fax: 727.210.2354, upon the recommendation of the ARC/STSA, 6 W. Dry Creek Circle, Suite 110, Littleton, CO 80120, phone: 303.694.9262, fax: 303.741.3655.

Teaching Learning Center and Campus Kids- NAEYC Academy for Early Childhood Program Accreditation.

The following programs are accredited by the Engineering Technology Accreditation Commission (ETAC) of the Accreditation Board for Engineering and Technology, Inc. ETAC/ABET, 415 N. Charles St., Baltimore, MD 21201, phone: 410.347.7700, www.abet.org:

- Civil Engineering Technology, Program 9410
- Electronic Engineering Technology, Program 9420
- Mechanical Engineering Technology, Program 9440
- Nuclear Engineering Technology, Program 9416

Published annually by Lakeland Community College, Kirtland, OH 44094-5198 • Publication date April, 2015.

This catalog contains official information for the academic years 2015-2016. The college reserves the right to appeal, change, or amend rules, regulations, tuition and fees, and may withdraw, add to, or modify procedures, courses, and programs listed herein.

Lakeland Community College will not deny educational or employment opportunities to any person with regard to race, color, religion, sexual orientation, handicap, ancestry, veteran status, age, marital and/or parental status.

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A Message from the President

Welcome to Lakeland Community College!

It is an exciting time to be a student at Lakeland. We are a campus community dedicated to impacting your life through learning.

Some of you are here at Lakeland to earn an associate's degree and then transfer to a four-year college or university, which will save you thousands of dollars on your college education. Lakeland's Holden University Center gives you even more opportunities to complete a bachelor's or graduate from a variety of leading colleges and universities right here in Lake County. Some of you will enroll in our career training programs to gain immediate employment in high demand fields, and some will take classes to learn new skills that you need to obtain a better job or to advance in your current career.

Whatever reason brings you to our campus, you'll find that we have a "students first" culture here. We want to see you succeed in attaining your educational goals. This means that we are constantly searching for ways to remove barriers to attending college – cost, time, or personal obligations – by various means such as keeping tuition low, providing more online classes, and offering weekend and evening courses.

We provide a quality education at an affordable price, and we've been doing it for more than 48 years. We are thankful for the opportunity you have given us to play a key role in your lives. On behalf of Lakeland's board of trustees, faculty, and staff, I hope you have an enjoyable and successful learning experience.

Morris W. Beverage Jr., EDM
President

General Information

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Lakeland
COMMUNITY COLLEGE

General Information

The College

Lakeland Community College is a public institution of higher education committed to providing quality learning opportunities to the region it serves. The college strives to provide an environment for students that fosters the development of social, political, aesthetic and moral values.

Providing the public with the highest quality education possible - while keeping the price affordable - is one of the college's top priorities. Lakeland invites students of all ages, backgrounds, locations, and educational and economic levels to take classes that will increase their personal and intellectual development. The faculty at Lakeland strive to make a college education a positive experience for students in a way that encourages a desire for life-long learning. Students gain the skills and the "know how" to help them along on their journey toward a career of their choice.

Lakeland offers courses during the day, evening, weekends and online. Additionally, a Weekend College Program was developed specifically for individuals who want to complete their studies at a faster pace.

The college is committed to offering learning opportunities to meet the needs of its diverse student body. Lakeland is a vibrant learning community that allows collaborative experiences that result in new ideas, understanding and personal growth for each learner.

Core Purpose

To impact lives through learning.

Core Values

Excellence - ensuring high quality services and learning opportunities through assessment for continuous improvement.

Accessibility - serving as a center of learning for all people by removing barriers, strengthening relationships, and maintaining affordability.

Diversity - fostering civility by respecting and celebrating differences among individuals and communities.

Integrity - committing to high standards of personal and professional behavior within a culture of honesty and trust.

Innovation - empowering learners and communities to be creative and versatile in their thinking and performance.

Joy - creating diverse and vibrant learning communities that inspire lifelong learning.

Vision

To be the best in creating quality learning opportunities.

Mission

To provide quality learning opportunities to meet the social and economic needs of the community.

Programs of Study and Service

Lakeland offers numerous programs to fulfill its mission. Transfer programs allow students to take the first two years of a traditional four-year college or university curriculum on campus. Technical programs prepare students for employment at the paraprofessional level. Continuing Education programs meet the needs of individuals interested in additional learning through professional development and personal enrichment courses.

General Information

The Campus

Lakeland's campus sits on 400 acres of rolling, wooded countryside in Kirtland, Ohio, about 25 minutes outside of Cleveland. The main entrance is located on State Route 306 near the intersection of Interstate 90. Short-term visitor parking is available near the primary faculty-staff parking lot. All students and visitors may park in any of the large parking lots surrounding the buildings.

Across the main campus entrance is the state-of-the-art Holden University Center building. The Holden University Center of Lakeland gives students convenient access to complete a bachelor's or graduate degree from a variety of leading colleges and universities. Graduates will receive their degrees from the institution of their degree program. The degree is the same as having completed a degree on the university's main campus.

The Holden University Center, combined with Lakeland coursework, offers an affordable and convenient way to earn a bachelor's or graduate degree.

In addition to being a place for learning, Lakeland serves as a center for a variety of other community activities. Seminars for small business owners, arts and crafts shows, lectures, sports leagues and clubs, theater productions, film festivals, and art exhibitions are a few examples of the wide reach that the college has in the community.

As a community college, Lakeland offers something for everyone. Students and visitors of all ages, cultures and backgrounds from Lake, Geauga, Ashtabula, and eastern Cuyahoga counties will find that Lakeland offers opportunities that impact lives.

Academic Organization

Dr. Morris W. Beverage Jr., President
(Room D-2113, 525.7177)

Dr. Morris W. Beverage Jr., Interim Provost
(Room B-1054, 525.7096)

Academic Divisions

Applied Studies Division

Laura C. Barnard, Dean of Applied Studies (Room T-153a, 525.7084)

Computer, Design and Engineering Technologies

Areas of Study: Cisco Networking Technology and Network Security (CNET); Civil Engineering Technology and Construction Management (CIVT); Computer Integrated Manufacturing Technology (CIMN); Electronic Engineering Technology (ELEC); Engineering (ENGR); Graphic Design (GRDS); Information Technology and Computer Science (ITCS, ITDB, IT IS, ITON); Engineering Math (MATH 0890, 1001, 1101, 1201); Mechanical Engineering Technology (MECT); Media Technology (MDIA); Network Infrastructure Engineering Technology (CNET); Nuclear Engineering Technology (NUET); Photography (PHOT); Quality Engineering Technology (QENT); Welding (WELD); Apprenticeship Programs in Machine Tool Trades.

Department Chairs:
Civil Engineering Technology: Mike Hoffner, 525.7184
Computer Integrated Manufacturing: Rich Basinski, 525.7168
Electronic Engineering Technology: Ken White, 525.7292
Graphic Design: Amy Peck, 525.7046
Information Technology and Computer Science: Sue Baker, 525.7265
Media Technology: Robert Hill, 525.7132
Mechanical Engineering Technology: Rich Basinski, 525.7168
Nuclear Engineering Technology: Hiram Reppert, 525.7523

General Information

Education, Human and Public Services

Areas of Study: Criminal Justice/Corrections/Law Enforcement (CRMJ); Early Childhood Education (ECED); Education (EDUC); Emergency Management (EMGT); Fire Technology (FIRE); Human Services (HMSV)

Department Chairs:
Criminal Justice: Gregory Truhan, 525.7136
Early Childhood Education: Paula Ahlstrom, 525.7835
Emergency Management: Lee Silvi, 525.7252
Fire Science: Lee Silvi, 525.7252
Human Services: Alice Walker 525.7216

Health Technologies

(Room H-306, 525.7082)

Areas of Study: Biotechnology Science (BIOS); Dental Hygiene (DNHY); Emergency Medical Technology (EMTS-Basic and Paramedic); Healthcare Services (HLTH); Health Information Management Technology (HIMT); Histotechnology (HSTY); Massage Therapy (MSTH); Medical Assisting (MDAS); Medical Laboratory Technology (MDLT); Multi-Skilled Health Technology; Nursing (NURS); Physical Education (PEHR); Radiologic Technology (RADT); Respiratory Therapy (RESP); Surgical Technology (SURG)

Department Chairs:
Biotechnology Science: Joe Deak, 525.7466
Dental Hygiene: Jennifer Barr, 525.7190
Health Information Management Technology, Christine Jerson, 525.7490
Histotechnology: Kathryn Ertter, 525.7169
Medical Assisting: Michele Miller, 525.7428
Medical Laboratory Technology: Kathryn Ertter, 525.7169
Multi-Skilled Technology: Kathryn Ertter, 525.7169
Nursing: Kathleen Gravens, 525.7416
Paramedic/Emergency Medical Technology: Kevin Edmond, 525.7693
Physical Education: Debra Barnick, 525.7832
Radiologic Technology: Jack Thomas, 525.7074
Respiratory Therapy: Catherine Kenny, 525.7343
Surgical Technology: Nancymarie Phillips, 525.7016

Management

Areas of Study: Accounting (ACCT); Business (BUSM); Finance (FINN); Business Math (MATH 1040, 1050, 2130, 2135); Paralegal (PARL); Parks and Recreation Management (PARK); Real Estate (REST-credit courses only)

Department Chairs:
Accounting: James Racic, 525.7189
Business Management: Connie Golden, 525.7340
Paralegal: 525.7352

Arts and Sciences Division

Dr. Steven Oluic, Dean of Arts and Sciences
(Room B-3056, 525.7079)

Arts and Humanities

Areas of Study: Art (ARTS); Dance (DANC); Humanities (HUMX); Music (MUSC); Philosophy (PHIL); Theatre (THEA)

Department Chairs:
Fine Arts: Derek O'Brien, 525.7442
Humanities/Philosophy: Doug Webb, 525.7160
Music: Matt Saunders, 525.7105

General Information

Languages and Communications

Areas of Study: American Sign Language (ASLI); Chinese (CHIN); Communication Studies (COMM); English (ENGL); English as a Second Language (ESLP); Journalism (JRNL); Modern Languages (FREN, GERM, ITAL, SLOV, SPAN)

Department Chairs:
American Sign Language: Jeanette Brossmann, 525.7187
Communication Studies: Eric Usatch, 525.7718
Composition/Language Literature Co-Chairs: Patrick McLaughlin, 525.7353, and Tobin Terry, 525.7740

Sciences and Math

Areas of Study: Biology (BIOL); Chemistry (CHEM); Geology (GEOL); Mathematics (MATH) other than business and engineering; Physical Science (PSCI); Physics (PHYS)

Department Chairs:
Biology: Justin Rosemier, 525.7162
Chemistry: Jason Thomas, 525.7532
Mathematics: Bill Previts, 525.7552 and Carl Stitz, 525.7443
Physical Sciences: Barbara Bates, 525-7104

Social Sciences

Areas of Study: Anthropology (ANTH); Economics (ECON); Geography and Geospatial Technology (GEOG); History (HIST); Interdisciplinary Studies (IDST); Political Science (POLS); Psychology (PSYC); Sociology (SOCY); Urban Studies (URST)

Department Chairs:
Behavioral Social Sciences (ANTH, PSYC, SOCY, URST): Susan Fogarty, 525.7194
Geography/Geospatial Technology: Mark Guizlo, 525.7251
Macro Social Sciences (ECON, HIST, POLS): Chris Skubby, 525.7161

Instructional Support

Student Learning and Support Services

Laura C. Barnard, Associate Provost for Retention and Completion (Room B-1047, 525.7084)
Completion by Design: First Year Experience (FYEX), Completion Plan; College Credit Plus; College Tech Prep; Learning Center; Transition Mentors; Regulation and Compliance; Academic Division Grant Resource Management

Dr. Deborah L. Hardy, Associate Provost for Teaching and Learning and Dean of Faculty (Room B-1047, 525.7446)
Accreditation; AQIP; Curriculum Management; Department & Program Review; Faculty Orientation; Faculty Professional Development; Learning Assessment; Part-Time Faculty Coordination

William Kraus, Associate Provost for Enrollment Management (Room B-1053, 525.7828)
Accommodation Center; Admissions and Registration; Articulation & Transfer; Enrollment Management; Financial Aid; First Year Experience (FYEX); Holden University Center Partnership Development; One-Stop; Transfer Center; evening, weekend, and accelerated learning

Bill Knapp, Chief Academic Technologies Officer (Room C-2060, 525.7716)
Center for Learning Innovation; Counseling Services (COUN); eLearning; Information Literacy (INFL); Instructional Technologies; Learning Technologies; Library

Richard J. Novotny, Associate Vice President of Student Development and Dean of Students (Room S-243, 525.7358)
Athletics; Bookstore; Career Services; Event Services & Campus Dining; Hispanic Services; Men's Resource Center; Student Activities; Veterans Services; Women's Center

Admissions

Admissions Policy

For credit courses, admission to Lakeland is open to:

- **New first time in college students** who are high school graduates, students who hold a GED, and non-high school graduates whose high school class has already graduated and have successfully completed the Ability to Benefit test.
- **Current high school students** who meet the College Credit Plus admissions criteria.
- **Transfer students** who have evidence of a post-secondary degree or a college transcript reflecting at least 15 credit hours from a regionally accredited institution.
- **Transient students** who are matriculated at another college, enroll for one term only, and expect to return to their home school for continued study.
- **Non-degree/non-certificate students** who enroll to take courses for personal enrichment or professional development. Non-degree students must be a high school graduate or have obtained a high school diploma equivalency.

Admission to the college does not guarantee entrance into programs with selective admission criteria.

Admission Procedures

New first time in college students

1. Submit an application for admission.
2. Submit an official final high school transcript from a regionally accredited high school; or a copy of a GED certificate; or pass the Ability to Benefit Test.
3. Take Lakeland's placement test.
   a. Submission of ACT/SAT scores are recommended for high school seniors or recent high school graduates and may eliminate the need to participate in Lakeland's placement testing.
   b. Home school graduates can also present ACT/SAT scores which may eliminate the requirement to complete the Ability to Benefit Test.

Current High School Students (College Credit Plus)

1. High school students applying to Lakeland must submit a College Credit Plus admissions application.
2. Submit an official high school transcript.
3. Register for the COMPASS placement exam and achieve a minimum placement level of ENGL 1110 and MATH 0950; or achieve an ACT minimum score of 18 in English and 21 in math; or an SAT minimum score of 450 in Critical Reading (or 430 in Writing) and 500 in math.

Transfer students

1. Submit an application for admission.
2. Submit an official college transcript(s) from each college attended.

Transient students

1. Transient students must submit an application for admission.
2. Transient students may be required to submit an official college transcript or a statement of course approval from their home institution to meet course prerequisites.

Non-Degree/Non-Certificate students

1. Non-degree students must submit an application for admission.
2. Non-degree students are not required to submit high school or college transcripts and also are waived from the placement test admissions requirement.
   a. Non-degree students must still meet all course prerequisites.
   b. Registration in developmental courses is not permitted unless the student has completed the placement test.
3. There is no limit on the number of credits a student can earn as a non-degree student.
4. In accordance with the US Department of Education Office of Federal Student Aid, financial aid is not available for non-degree students.

All academic programs adhere to the admissions policies and procedures of Lakeland Community College. Programs will not exclude an otherwise qualified individual from participation solely on the basis of a disability. An "otherwise qualified" individual is one who is able to meet all of the program requirements in spite of their disability. Student participation in a program will be evaluated on an individual basis and will consider the student's ability to meet program requirements and objectives, and the safety of the student and others. It will be the student's responsibility to seek this advisement from the appropriate college personnel.

Males age 18 to 26 must be registered with the Selective Service prior to enrolling at Lakeland. Failure to do so will result in the student being charged the out-of-state tuition rate. Students may confirm their registration status or register with the Selective Service online at www.sss.gov.

Lakeland Transient Student Authorization

Lakeland students planning to take a course for Lakeland credit at another college/university while completing a certificate or degree at Lakeland Community College must obtain approval from Lakeland prior to enrolling at the other institution. Failure to obtain prior approval may risk the transfer of credit. Steps in the Lakeland transient student process include:

1. Obtain a transient form from Lakeland's Admissions Office or Counseling Office.
2. Obtain written approval from one of the following:
   a. Students who intend to enroll in technical courses required in the associate of applied business, associate of applied science, or associate of technical studies degree or certificate programs should seek approval from the Lakeland program chair or dean of the appropriate division.*
   b. Students who intend to enroll in non-technical courses should seek approval from a Lakeland counselor, department chair, registrar, or dean of the appropriate division.*
3. Follow the admissions and registration procedures established by the other institution.
4. Have official transcript(s) sent to Lakeland's Admissions Office upon completion of the course(s). It is the student's responsibility to ensure the transcript(s) are received.

**Students may be required to provide a college catalog, course syllabus, and/or names of textbooks to determine course equivalencies.*

Mandatory New Student Orientation (NSO)

New Student Orientation sessions are offered throughout the year. Students will be provided with strategies to succeed in college along with information about the services and resources Lakeland has to offer. Students will meet with a counselor to schedule classes, interact with myLakeland, tour the campus, and obtain their Lakeland Student ID card. All new, first-time college students must complete NSO prior to course registration. Contact the NSO Office (440.525.7349) or see the semester enrollment guide for more information.

Procedures to Receive Transfer Credit

Lakeland Community College will grant transfer credit for courses completed at other colleges and universities according to the following guidelines:

A. Only official transcripts will be used in the evaluation process. Official transcripts must be forwarded directly from the sending institution to the Admissions Office of Lakeland Community College.

B. Credits must have been earned at an institution which is accredited by one of the regional associations listed below:
   - Middle States Association of Colleges and Schools
   - New England Association of Schools and Colleges
   - North Central Association of Colleges and Schools
   - Northwest Association of Colleges and Schools
   - Southern Association of Colleges and Schools
   - Western Association of Schools and Colleges

C. Only non-remedial courses with a grade of "D" or higher will be accepted in transfer.

D. Non-remedial courses with grades of "pass" and "satisfactory" are accepted for transfer.

E. Only course credits and credit hours are transferable; previous grade point averages do not transfer.

F. Course work completed at schools which are not regionally accredited and/or not candidates for accreditation will not be transferable; however, the dean of the academic division in which the course is offered at Lakeland may grant credit at their discretion.

G. In most instances, transcripts from institutions outside the United States will need to be evaluated by an independent credit evaluation organization at the student's cost.

Transfer students may be required to provide college catalog(s) and/or course syllabi and names of textbooks used in courses to the Transfer Student Center at Lakeland to ensure thorough transfer credit evaluations.

Prior Learning Credits

Credits of prior learning (e.g., Advanced Placement, CLEP, credit by examination, credit by experience, etc.) awarded at other regionally accredited colleges will be accepted as transfer credits. However, these credits may not fulfill specific degree program requirements and will be evaluated by the department or dean for equivalency if it cannot automatically be transcripted by the Admissions Office. See pages 14-15 for more information.

Technical Transfer Credit

Course credit applicable to Lakeland's certificate programs and associate of applied business, associate of applied science, or associate of technical studies degree will be accepted as transfer credit from properly accredited colleges and universities (as determined by Lakeland policy 3354:2-46-15). Technical credits must be reviewed for equivalency of technology.* The Lakeland Counseling Office has a list of technical credits which have prior equivalency approval. All other technical credits must be approved by Lakeland's program chair or dean of the appropriate division. Courses determined not equivalent will be granted transfer as elective credits. In order to graduate with a technical degree from Lakeland Community College, students must enroll and earn no fewer than 20 technical credits at Lakeland Community College for that particular major.

**Students may be required to provide a college catalog, course syllabus, and/or names of textbooks to determine course equivalencies.*

Placement Testing

In an effort to ensure "access to success," Lakeland Community College requires that all students take the COMPASS exam when they apply for admission and prior to registering for classes. The COMPASS exam tests students in English and Math to determine their readiness for college-level coursework. Testing is conducted in a group session. After the session, students will receive information regarding test scores and appropriate English and Math courses. Students who place into pre-college developmental level English courses are required to enroll in these courses during their first semester.

For more in-depth information regarding degree or certificate programs, students should schedule an appointment with a counselor for a date after their placement test session. Contact the Counseling Office at 440.525.7200 to make an appointment to meet with a counselor.

Students are encouraged to take the test as soon as possible to avoid interruption in their academic endeavors at Lakeland. A hold will be placed on student accounts that will require completion of the placement exam PRIOR to registration. Students should plan to take the exam as soon as possible. A credit application and high school transcript must be on file in order to register for and to take the test.

Testing sessions are **by appointment only**. Space is limited.

Students must reserve a seat in a scheduled session via myLakeland. To register, go to http://my.lakelandcc.edu. Click on the "Student" tab. Under "Schedule It," click on the COMPASS test link. Under "Schedule Compass Session" enter your Lakeland ID – a list of required tests will appear. Review available session days and times. Reserve a seat by clicking on the "Reserve" button. Contact the Test Center Office at 440.525.7019 with questions regarding scheduling the placement exam.

Testing begins **promptly** at the start time. Late arrivals will **not** be admitted to the test session and will be **required** to reschedule.

Students may be exempt from placement testing if they:

- Present satisfactory ACT or SAT scores in math & English
- Earned a degree from another accredited college or university
- Are a senior citizen taking classes on an **audit** basis
- Register for classes as a transient student from another college or university
- Register for courses on an audit basis
- Transfer to Lakeland from another accredited college or university with at least 15 semester credits

Contact the Admissions Office at 440.525.7100 for more information regarding qualifying exemptions.

Special Programs

College Credit Plus Program

Lakeland's College Credit Plus (CCP) program offers high school students the opportunity to enroll at Lakeland on a part or full-time basis, and earn college credit which may also be used to fulfill their high school graduation requirements.

The intent of this program is to offer a broad range of college level courses which provide educational opportunities not typically available in high school. Admission to this program is limited to high school students who have clearly illustrated the ability to handle college level work and who test remediation free.

Interested students and their parents should follow the four steps below to determine eligibility to participate in the CCP program.

Step 1: File a CCP application with Lakeland Community College.

Step 2: Submit high school transcripts.

Step 3: Register for COMPASS placement exam and achieve a minimal placement level of ENGL 1110 and MATH 0950, OR, achieve an ACT minimum score of 18 in English AND 21 in math, OR, achieve an SAT minimum score of 450 in Critical Reading or 430 on Writing AND 500 in math.

Step 4: Attend a CCP registration session. Parents are required to attend with their student.

Visit lakelandcc.edu/ccp for more information on the CCP program, including a downloadable admissions form and the updated handbook. In addition, students can RSVP for CCP Information Sessions and COMPASS Placement Testing.

Cross Registration

Qualifying full-time (12 or more credits) Lakeland students may register for one course per term during the regular academic year, on a space available basis, at any of the institutions participating in the cross registration program.

Program information and applications are available in the Admissions Office.

Evaluation of Prior Learning

Students may receive credits or a course waiver if they can show proficiency and knowledge in a particular subject. Students who believe their prior education or related work experience qualifies for any of the options shown should make an appointment with a counselor. Final decisions rest with the division dean of the academic division in which the challenged course or courses are taught.*

Course Waiver means there are reasons which have been accepted for the student to be excused from taking a course specifically identified in the student's program of study. No credit is received. Students are required to elect other courses to replace those courses waived in order to meet the college's required minimum of 60 semester hours for graduation with an associate degree. See the appropriate dean for divisional policy on course waiver.*

Advanced Placement Testing means that some students take special courses in high school designed as Advanced Placement. Upon completion of such a course, a student takes a nationally normed examination which measures his/her mastery of specific course content for the purpose of placement in college. Exam scores of 3 or above will be awarded the aligned course(s) and credits for the exam area successfully completed. Scores of 4 or 5 **may** provide additional credit. Submit all test scores of 3 and above to the Admissions Office for processing.

Credit by CLEP means that the student has taken an examination through the College Level Examination Program (CLEP) and has achieved a sufficiently high score to receive credit for a specific course or set of courses or credit of a general nature. Standards are established on a divisional basis. Credit by CLEP is similar to credit by examination. CLEP tests are locally administered and arranged through Cleveland State University. The student should consult with the appropriate dean regarding specific CLEP examinations divisionally approved for course or general credit. If the Admissions Office cannot automatically transcript the credit, you will be referred to the appropriate dean.

Credit by Certification means that the student may receive credit for selected courses because of formal, noncollegiate learning. Such learning is attested to through the awarding of certificates, diplomas, or letters of completion. A fee is assessed if credit is granted. See the appropriate dean for divisional evaluation.*

Credit by Examination means that the student elects to take a comprehensive examination or set of tests to demonstrate that course goals and objectives are met at a satisfactory level. A fee is assessed prior to taking the exam. See the appropriate dean for opportunities for credit by examination.*

Admission/Registration Information

Credit by Experience means that the student may substitute career or life experiences for selected courses. The student must demonstrate both practical skill and theoretical knowledge which meet the course goals and objectives. Student experiences submitted for such credit will be evaluated by the full-time faculty of the relevant discipline. A fee is assessed prior to the student/dean evaluation. See the appropriate dean for opportunities available.*

Credit by Articulation means that you may be eligible to receive college credit for some of your high school coursework. Lakeland has an extensive list of articulation agreements in conjunction with the College Tech Prep program. Reference these established agreements on page 39. Consult with your high school counselor, Lakeland counselor, or the Tech Prep admissions coordinator for details.

Other surrounding school districts are currently working with Lakeland Community College to establish new articulation agreements that students can use to earn college credits toward an associate of applied business or applied science degree. Until these are finalized, students can use any of the methods listed under evaluation of prior learning to earn college credit.

College Tech Prep

See page 38-39 for details.

**Deans are listed under "Academic Organization" on pages 7-9.*

Registration

Registration Procedures

Lakeland offers easy, convenient registration: in-person at the Admissions Office on the main campus in Kirtland or at Lakeland East in Madison; online (lakelandcc.edu); or phone-in (440.525.7101 or 1.800.589.8520).

The schedule of classes is available online only. The online schedule provides up-to-date real-time data for class offerings and seat availability and includes class descriptions, prerequisite information and required textbooks and pricing. View the class schedule at lakelandcc.edu/schedule or go to myLakeland and click on "Credit Course Schedule" on the login page.

New, transfer or transient students must complete an application for admission and must fulfill all admissions requirements prior to registering for classes.

Registration Policy

Lakeland Community College believes sound registration processes promote student success and that all students should be properly registered and present in the classroom (or available for online courses) from the first day that the class meets. Therefore, effective Fall 2011, registration activity is limited to the time periods outlined in the Registration Schedule.

Schedule Adjustments

First week of the term: Officially registered students wishing to add a class during the first week of the term are required to obtain permission from the faculty member if the first class meeting has been held. If the class has met, the faculty member must sign the appropriate college form. The student must then return the form to the Admissions/Registration Office for processing.

The first day of online classes is considered the first day of the term.

Students wishing to drop a class may do so online through their myLakeland account or in person at the Admissions/Registration Office.

Specific registration dates are published online and in the semester enrollment guide.

Withdrawal from Classes

Students are able to withdraw from a class from the beginning of the second week through the end of the twelfth week of the semester. A course withdrawal will be indicated on a student's academic record by a grade of "W."

After the twelfth week no withdrawal is permitted.

Students registered for courses other than the standard 16-week semester should consult the Lakeland website or the semester enrollment guide for appropriate deadlines regarding withdrawal.

A student seeking an exception to the posted withdrawal deadline for reasons beyond his/her control, must petition the Registrar in writing for a late withdrawal and will need to indicate that attendance and completion of coursework is not possible for documented serious personal, medical, or employment reasons.

Documentation must be included with the petition.

Administrative Withdrawal

Students will be administratively withdrawn from any class in which they are enrolled and have not attended during the first two weeks of the semester. Administrative withdrawals will occur at the beginning of the 3rd week of classes at zero percent refund (or during the first 20 percent of a flexibly scheduled class). A grade of an AW will be issued.

Change of Address, Phone or Program

A student must file a student record change form in the Admissions Office if he/she changes his/her address, phone, or academic program while enrolled at Lakeland.

Cancelled Classes

Occasionally the college must cancel a class because of insufficient enrollment. Students will be notified as soon as possible. Students may replace the cancelled class. Students who do not wish to make a substitution will receive a 100 percent refund in the mail. The college reserves the right to cancel any classes due to unforeseen circumstances.

Tuition and Fees

Schedule of Tuition and Fees

See enrollment guide.

Application Fee (New Students)

The application fee is $15. This is a one-time, nonrefundable fee charged at the time of registration.

General Fee

The general fee covers direct student services (see enrollment guide).

Support Services Fee

The support services fee is paid by all students enrolled for credit irrespective of the number of credit hours taken (see enrollment guide).

Supplemental Course Fees

In addition to the general, instructional, and support services fee, students may be charged supplemental course and incidental fees due to the nature of certain courses. The courses which have supplemental fees are indicated in the enrollment guide.

Residency Requirements

Lakeland Community College is required by law to classify student residency as follows:

1. In-County - Resident of Lake County who has lived in Ohio **for at least one (1) year, AND in Lake County for at least six (6) months.**
2. Out-of-County - Resident outside of Lake County who has resided in Ohio **for at least one (1) year.**
3. Out-of-State - Resident of another state who has NOT resided in Ohio **for at least one (1) year.**

Students who cannot provide proof of residency in Ohio will be charged the out-of-state tuition rate.

International students on an F1 visa are subject to the out-of-state rate for the duration of enrollment.

Students requesting a change of fees to in-state or in-county MUST submit an Ohio driver's license AND documentation of at least six consecutive months of residency. Acceptable forms of documentation are:

1. Canceled rent checks
2. Property tax receipts
3. Rental or lease agreements
4. Real estate title/deed of ownership of property
5. Utility bills - water, gas or electric only (Bill MUST include student name and address)
4. Voter registration card

A change to a Lake County address does not automatically change residency status. Students must submit acceptable documentation to the Registrar for review and approval.

Please note fees will ONLY be adjusted prior to or not later than the first day of the term. No mid-semester adjustments will be made. If documentation is presented in the middle of the semester the next term will have the updated residency code listed.

Senior Citizen Fee Schedule (60 years of age or over)

As a community service, Lakeland Community College offers a tuition-waiver program for senior citizens 60 years or older that allows them the opportunity to audit credit courses on a space-available basis. Senior citizens taking advantage of this opportunity are responsible for purchasing course materials and books in addition to the general, lab and service fees. To take advantage of this opportunity, a senior citizen must be certified as eligible for this service. Once certified as eligible, participants may register the last two days of registration. Please contact the Admissions Office at 440.525.7000 for additional information on this service and registration dates. Additionally, please refer to the Lakeland Community College Enrollment Guide for registration dates.

Refund Policy (8 or 16-Week Semesters)

Students who drop a class will be entitled to the following refund:

The first week of the semester	100%
The second week of the semester	50%
After the second week of the semester	No Refund

Payment of Tuition and Fees

Statement of Financial Responsibility

By registering for courses at Lakeland Community College, students accept responsibility for payment by the due date of all college charges assessed to their student account, including tuition and fees, late payment fees, and reversals of financial aid. Students fully accept this debt as their personal financial responsibility. Students acknowledge that non-attendance does not relieve them of financial responsibility for the courses in which they are enrolled and that they will access their bill online to remain abreast of any outstanding balances or other financial obligations. Students both understand and agree that should they fail to make the required full payment or receive financial aid to meet the balance by the established deadline, they may be charged late payment fees, they will be restricted from registering for additional courses this term or for future terms, their transcripts and diplomas will be placed on hold, and they may be denied other college services. In addition, students understand that accounts more than 45 days past due may be placed with the Ohio Attorney General's Office and they will be responsible for paying any additional fees and costs, including attorney fees and court costs, associated with collection of this debt. Students understand that the college sends electronic notifications (emails) to their official Lakeland email account to communicate important updates, and that they must adhere to college procedures for dropping or withdrawing from courses.

Payment Options

Students may pay their accounts with cash (in-person only), credit cards (online or in the Cashier's Office) or checks (online or in the Cashier's Office). Note: There is a 10 business day waiting period before holds will be released when paying by check.

Any check or credit card payment tendered to Lakeland Community College in payment of amounts due to the college and dishonored for any reason shall be charged a $25 return payment charge. The student will not be permitted to register for any subsequent term, obtain official transcripts, or receive grades for the current semester until the financial obligation has been met. A late fee may be charged on all unpaid accounts.

Tuition Payment Plan

It is easy to obtain an interest-free loan to pay for tuition. Students need to register for classes, then enroll in the online tuition loan payment plan, by following the instructions for enrollment and paying the $25 non-refundable processing fee with electronic check or credit card. Instructions on how to enroll are outlined in the Billing Center Brochure available at the Cashier's Office, Admissions, Registration, Financial Aid, and Counseling. Some restrictions may apply. A late fee will be charged for failure to pay by the due date. Please contact the Cashier's Office for assistance.

Financial Aid

Students requesting financial aid should contact the Financial Aid Office for information, applications and assistance with completing forms.

Types of financial aid available at Lakeland Community College include:

Grants - Federal, state, and institutional funds that typically do not need to be repaid. Eligibility for grant money is based on financial need.

Scholarships - Scholarships are awarded based on merit, need and other established criteria. Lakeland scholarships are available for various programs through the generosity of private donors and civic organizations.

Employment - Student employment opportunities are available through Lakeland's Career Services Center.

Loans - Funds that will need to be repaid.

Books, Supplies and Day Care with Financial Assistance

Some types of financial assistance can be used to pay for books and supplies. If your total financial aid award exceeds tuition and you wish to use those funds in the Bookstore, you must sign the Authorization Form to allow the Financial Aid Office (FAO) to credit your account for books, supplies, day care, and other debts to the college. Forms are available in the FAO or can be signed electronically at my.lakelandcc.edu.

Eligibility Requirements

To determine whether or not you qualify for financial aid, we compare the cost of attending Lakeland with your ability to contribute to the cost. Your ability to pay will be determined by the Free Application for Federal Student Aid (FAFSA). The FAFSA can be filed online at www.fafsa.gov. Paper applications can be downloaded for print at www.federalstudentaid.ed.gov.

To receive financial aid, you must do the following:

- Earn a high school diploma or GED from a regionally accredited high school.
- Be a United States citizen or eligible non-citizen.
- Register with the Selective Service, if applicable.
- Be enrolled in a degree program or in a certificate program that has been approved for federal funding.
- Complete the Free Application for Federal Student Aid (FAFSA).
- Meet the standards published in the Standards of Academic Progress Policy for Federal Aid.

Freeze Date

The financial aid freeze date is used each semester to lock in a student's enrollment status for awarding financial aid. The classes a student is enrolled in on the freeze date each semester determines the amount of federal aid they are eligible to receive.

It is in the student's best interest to make all schedule changes for the entire semester by the freeze date. If a student adds or drops classes before the freeze date, the amount of financial aid will be affected. If classes are dropped or added after the freeze date, the federal aid will not change as long as the student has attended all of the classes enrolled in on the freeze date.

Please check financial aid announcements each semester for exact freeze dates.

Correspondence

All correspondence from the Financial Aid Office will be sent through the student's Lakeland email. The Financial Aid Office will not be mailing paper award letters, request for documentation, etc. It is the student's responsibility to check his/her Lakeland email for financial aid information.

Other Assistance

Veteran's Assistance - Available to veterans, including educational assistance for dependents of veterans. Contact the Department of Veteran Affairs at 1.888.442.4551.

WIA (Workforce Investment Act Program) - Pays tuition and books for qualifying applicants. Contact the WIA Office serving your county.

BVR (Bureau of Vocational Rehabilitation) - May assist with tuition, books and other expenses for differently abled students. Contact the BVR Office nearest your home.

U.S. Armed Services - All branches of the Armed Services now offer monthly stipends and tuition assistance. Contact the Recruitment Office of the military branch of your preference.

Education Tax Credits

The American Opportunity and Lifetime Learning Credits are available to tax-filers or their dependents to offset the cost of higher education.

The American Opportunity Tax Credit is a credit of up to $2,500 of qualified tuition and related expenses paid during the tax year per eligible student. The credit is available for the first four years of post-secondary education. To be eligible, the student must be enrolled at least half time in an undergraduate degree or other recognized credential. There are adjusted gross income limits for the tax-filer claiming the credit. In certain circumstances you may be eligible for a portion of the American Opportunity Credit to be refunded to the tax filer.

The Lifetime Learning is a credit of up to $2,000 of qualified tuition and related expenses paid during the tax year for all years of postsecondary education and for courses to acquire or improve job skills.

If you do not qualify for either of these tax credits, you may be eligible for a tuition and fees deduction, which can reduce your taxable income by up to $4,000 for the tax year.

For more detailed information on these tax benefits, please consult your tax advisor or go to www.irs.gov and access the instructions for Form 8863.

Standards of Academic Progress Policy

Federal regulations mandate that institutions of higher education establish minimum standards of "Satisfactory Academic Progress" for students receiving federal and state aid. This policy is used to determine eligibility for the following programs: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Work-Study, Direct Loans, Ohio War Orphans, Ohio National Guard, some private loans, and some scholarships.

Academic progress is measured in four ways at the end of each semester:

- Overall completion of credit hours attempted,
- Overall grade point average (GPA),
- Completion of degree/certificate within a maximum time frame;
- Students who have GPA hours and have a 0.00 GPA for the semester will become immediately ineligible for future financial assistance.

Students who are not meeting the Standards of Academic Progress but have extenuating circumstances may submit an appeal to see if financial aid eligibility could be extended. Deadlines to submit an appeal for the Standards of Academic Progress are posted on the electronic signage throughout campus, the announcement channel of the portal, and are indicated on the appeal form.

It is the responsibility of every college student to be aware of the policies that may affect any aspect of his/her college education.

The full version of the Standards of Academic Progress Policy can be obtained at the Financial Aid Office and can also be found on-line at my.lakelandcc.edu.

Refund Policy: Return of Title IV Federal Funds

A recipient of federal financial aid (Title IV) is subject to a recalculation of his/her aid eligibility if he/she:

- completely withdraws from all of his/her classes prior to the 60 percent point of the semester or
- stops attending all his/her classes before completing the semester or
- does not complete all the modules (courses which are not scheduled for the entire semester) for which he/she has registered at the time those modules begin

If one of the above applies the Financial Aid Office will calculate the portion of federal financial aid the student has earned and any unearned aid must be returned to the aid programs. Any credit balance from federal aid owed to the student will be placed on hold until the R2T4 calculation is completed.

The percentage of aid the student has earned is equal to the percentage of the semester the student has completed (date they withdraw or stop attending all classes). To determine percentage completed, the number of calendar days completed is divided into the number of calendar days in the semester. This percentage is multiplied by the amount of aid disbursed or eligible to be disbursed to calculate the amount of aid the student has earned and can keep.

Any unearned aid (total aid minus earned aid) must be returned to the aid programs in the following order:

Federal Direct Unsubsidized Loan
Federal Direct Subsidized Loan
Federal Perkins Loan
Federal PLUS Loan
Federal Pell Grant
Federal SEOG

If it is determined that there is unearned aid, then the school and/or the student must return the unearned funds.

The school is required to return the total institutional charges multiplied by the percentage of funds that were unearned. Lakeland will bill the student for any account balance created when the college is required to return financial aid.

The student must return the unearned aid that the school is not responsible for returning. If the student is required to return loan funds, they do so under the terms of the loan. If the unearned aid the student must return includes federal grants, they are only required to return the grant amount that exceeds 50 percent of the original total federal grant aid received for that semester. If the amount the student owes is less than $50, then no repayment is required.

In some cases the R2T4 calculation will result in the student being eligible for a post-withdrawal disbursement of financial aid. The Financial Aid Office will notify the student if this is the case.

Lakeland will notify the student if they owe a grant overpayment. The student then has 45 days to repay the overpayment to Lakeland who will then return the unearned funds to the federal programs. Failure to repay the grant overpayment within 45 days will result in the student being reported to the Department of Education (DOE). At that point the student loses eligibility for federal financial aid at any institution and must pay or make payment arrangements directly with the DOE. Once the grant overpayment is paid in full or satisfactory payment arrangements with the DOE are made, the student regains eligibility for federal financial aid.

A student who fails all of their classes in a semester may be subject to a R2T4 calculation. If a student "earned" at least one of their Fs (i.e. attended class until the end of the semester and received an F for poor performance), then no calculation is required. However, if the student failed all classes because they stopped attending at some point in the semester, then a R2T4 calculation is required based on the last date of attendance. If a last date of attendance cannot be determined the 50 percent point of the term will be used as the withdrawal date.

Scholarships

There are a variety of scholarships available for Lakeland students. The online application is available via myLakeland. Visit the Scholarship Center listed under myRecords in the student links section for descriptions and criteria for each of the scholarships.

Veterans Educational Benefits

Lakeland's Veterans Affairs Office, located in the college Admissions Office, is dedicated to helping active duty personnel, veterans, reservists and dependents attain their entitled educational benefits and achieve personal and professional goals. Visit the Veteran Affairs Office EVERY semester and submit a Veteran's Registration Reporting Form to the college's Certifying Official for continued receipt of VA educational benefits. Web address: lakelandcc.edu/veterans.

To Apply for Educational Benefits from the VA: The original application for VA Educational benefits (22-1990) must be submitted with a copy of the Veteran's DD-214 member 4 copy (Chapters 30, 33, and 1607 only). Reservists (1606) must submit the Notice of Basic Eligibility (NOBE) and DD Form 2384 to the Certifying Official. The application form for Veteran Dependents is (22-5490). Application forms are available for electronic submission online at: http://vabenefits.vba.va.gov/vonapp/main.asp

Certificate of Eligibility (COE): The Department of Veteran Affairs will issue a Certificate of Eligibility to the applicant stating eligibility for the Montgomery or Post-9/11 (Chapter 33) benefits. A copy of the COE is needed for the veteran's file.

Prior Credit: Official transcripts of all previously attended colleges must be sent to the Lakeland Admissions Office. Veterans should also provide any ACE transcripts or CLEP grade reports. All prior credit must be reported to the Veterans Administration.

Program of Study: Every student who applies for VA benefits must have a stated objective and follow a program leading to completion of the objective. Please schedule an appointment with a Lakeland counselor, 440.525.7200, to formulate an education plan and evaluate prior college credit. ANY changes to this initial course of study MUST be reported and approved by the Certifying Official.

Physical Education Credit: A veteran who has had at least one year of active military service is eligible for two semester hours of physical education credit. Application should be made through the Certifying Official.

Schedule Changes: All course changes must be reported immediately to the Certifying Official and a change of status must be filed with the Veteran's Administration.

Repayment of Benefits: If a veteran receives a grade of "W" in courses for which VA benefits were received, he/she may be required to repay all money received for those units. If mitigating circumstances exist, the veteran may qualify for a waiver of repayment from the Veterans Administration. Receiving "AW," "FNA," or "UNA" grades may result in a VA overpayment to the student. Lakeland's Academic Standards Policy of satisfactory attendance, conduct and progress must be maintained to continue receiving VA Educational Benefits.

Enrollment Status: Veteran enrollment status is measured by the number of credit hours taken during a sixteen, eight, or five-week session. See below.

Veteran Enrollment Status by Number of Credit Hours			
Status	16-Week Session	8-Week Session	5-Week Session
Full-time	12 credit hrs.	6 credit hrs.	4 credit hrs.
3/4 time	9 credit hrs.	4-5 credit hrs.	3 credit hrs.
1/2 time	6 credit hrs.	3 credit hrs.	2 credit hrs.
CH:33 Only over 50% Rate of Pursuit	7 credit hrs.	4 credit hrs.	3 credit hrs.

Contact the VA: Questions and concerns regarding VA education benefits and payments should be directed to the Veterans Administration at their website www.gibill.va.gov or call 1.888.442.4551.

Servicemembers Opportunity College: Lakeland Community College is recognized as a Servicemembers Opportunity College and is approved by the Ohio State Approving Agency for Veterans.

Academic Integrity

Honesty, as the basic component of trust, is essential to both individual and institutional integrity. With this premise in mind, Lakeland Community College has set forth certain behaviors as being forms of misconduct, and thus potentially diminishing Lakeland's integrity, reputation for academic quality, and ability to function as an academic community. The institution's faculty and administration, therefore, regard academic misconduct as a serious offense. Established as violations of academic misconduct at Lakeland Community College are cheating, plagiarism, fabrication of material included in academic work, denying others access to information or material, enabling academic misconduct, and deception in order to gain academic advantage. Policies dealing with violations of academic misconduct may be obtained by visiting lakelandcc.edu/web/about/student-development or from the Student Development Office.

Student Conduct Code

The college's goal is excellence in education and scholarly pursuit. It is the purpose of the Student Conduct Code not only to protect the health, safety, welfare, and property of the college and its students, but to preserve the intellectual and educational atmosphere which prevails throughout the college community and to provide the opportunity for all members of the college community to attain their educational objectives.

Copies of the code and due process guidelines may be obtained by visiting lakelandcc.edu/web/about/student-development or from the Student Development Office.

In order to comply with federal regulations, the college is required to maintain records of written student complaints filed with the president, executive vice president and provost, and the dean of student development. Additionally, the college must share these complaints with the North Central Accreditation Association, but the individual identities will be omitted to ensure confidentiality.

Attendance

Individual instructors determine the attendance policy for their classes; there is no uniform attendance set by the college. Attendance is encouraged at all classes or laboratories for maximum student achievement. Attendance is required for all federal financial aid recipients and must be verified. Instructors will provide attendance information directly to the Financial Aid Office. If attendance cannot be verified, financial aid will be adjusted accordingly.

Change of Major Field of Study

Students may change their major field of study any time during their enrollment at Lakeland by completing a student record change form which is available in the Admissions Office. It is suggested that students consult with a counselor and the Financial Aid Office (if receiving assistance) before registering for classes in the new program.

Catalog in Force

Each student's academic requirements are based on the catalog which is in force during the student's first semester at Lakeland Community College.

Exceptions to the above may be necessary when changes in certification or licensure standards mandate changes in academic requirements or in college programs.

For programs that include an application for admission, the catalog in force is defined at the time of admission to the program. Students may elect to complete their certificate or degree requirements under a subsequent catalog but must use a single catalog and not a combination of catalogs.

Additionally, courses in some disciplines occasionally may be deleted, changed or developed; therefore, the college may require substitutions to reflect these changes.

NOTE: Students who do not enroll in courses for two consecutive years must fulfill the requirements of the catalog in force at the time of readmission or may elect a subsequent catalog.

Credit Hour/Student Load

A student carrying a class load of 12 or more credit hours per semester will be classified as a full-time student. A student who carries less than 12 credit hours per semester will be classified as a part-time student. Students wishing to enroll in more than 18 credit hours per semester (or 12 credit hours during the summer semester) must meet with a counselor and complete a "Petition to Enroll in More Than 18 Credit Hours" form. Students enrolling in a one-credit course typically spend approximately one hour in class per week for the entire semester with additional weekly time assumed for outside studying. Some course work, such as labs, carry a different contact hour-to-credit ratio.

English Requirement

All Lakeland degree programs include a requirement in English composition. Any student testing into ENGL 0111 or ENGL 1111, must enroll in and successfully complete this course before enrolling in any other courses. These courses can be taken concurrently with other developmental or credit bearing courses.

Reading Requirement

All Lakeland students who place into ENGL 0220 (College Reading) are encouraged to complete the course during their first semester.

Prerequisites

When a certain level of knowledge is necessary before taking a course, a prerequisite course is required. Students must take the prerequisite course before enrolling in the more advanced course. Failure to successfully complete a prerequisite course will result in the inability to remain enrolled in advanced-level courses. Prerequisites will be enforced, and are listed in both the course description section of the catalog and the schedule of classes.

Grading System

One measure of the quality of a student's academic achievement at Lakeland is the letter grade he or she earns for courses attempted. Each letter grade has a "grade point" value which is considered in calculating the "grade point average," commonly referred to as the student's GPA. Lakeland uses a "four-point" system in calculating the student's GPA, and this calculation occurs at the end of each semester through the use of the following simple formula:

Total Number of Grade Points Earned = Grade Point Average
GPA - Hours

Lakeland's letter grade system includes 17 grades, only 6 of which affect the GPA:

A	4 grade points per credit hour
B	3 grade points per credit hour
C	2 grade points per credit hour
D	1 grade point per credit hour
F	0 grade points per credit hour
FNA	0 grade points per credit hour
S/U	Satisfactory/Unsatisfactory (not calculated in GPA) S = "C" grade or better
SA	Satisfactory earned "A" if grades were issued (not calculated in GPA)
SB	Satisfactory earned "B" if grades were issued (not calculated in GPA)
SC	Satisfactory earned "C" if grades were issued (not calculated in GPA)
UD	Unsatisfactory earned "D" if grades were issued (not calculated in GPA
UF	Unsatisfactory earned "F" if grades were issued (not calculated in GPA)
UFNA	Unsatisfactory because of nonattendance (not calculated in GPA)
V	Audit (not calculated in GPA)
I	Incomplete (not calculated in GPA)
W	Withdrawal (not calculated in GPA)
AW	Administrative withdrawal (not calculated in GPA)
NA	No grade available (not calculated in GPA)
UNA	No grade available (not calculated in GPA) in a Satisfactory/Unsatisfactory course

The following example will illustrate how to calculate a GPA. Assume a student attempted five courses and earned the grades indicated below:

Course	Course Credit Hour Value	Grade Earned	Points Earned
#1	4 x	A (4 grade points)=	16
#2	3 x	B (3 grade points)=	9
#3	5 x	C (2 grade points)=	10
#4	2 x	F (0 grade points)=	0

Total: 14 course credit hour value and 35 points earned

35/14=2.5 GPA

A description of each letter grade used in the Lakeland grading system is noted below:

"A"	Indicates excellent academic performance, including consistent mastery of facts and concepts and a thorough understanding of course content.
"B"	Indicates good academic performance, including high-level mastery of course content.
"C"	Indicates average academic performance, including average mastery of course content.
"D"	Indicates marginal academic performance, with poor mastery of course content.
"F"	Indicates very poor performance in demonstrating even minimal mastery of course content. No course credit is given for this grade.
"FNA"	FNA indicates failure for nonattendance. No course credit is given for this grade. FNA grades will not be petitionable for refund purposes.
"UFNA"	UFNA indicates failure for nonattendance in a course taken on a satisfactory/unsatisfactory (S/U) basis. No course credit is given for this grade. UNA grades will not be petitionable for refund purposes.

Satisfactory/Unsatisfactory (S/U)

Students may choose to take some courses on a satisfactory/unsatisfactory (S/U) basis. A maximum of ten satisfactory/unsatisfactory semester credit hours may be applied toward an associate degree, and only one course per semester may be taken as satisfactory/unsatisfactory. Credit(s) will be granted (recorded as an "S" on the student's transcript) for courses taken with this option if a "C" grade or better was earned.

The request to take a course on a satisfactory/unsatisfactory (S/U) basis must be submitted to the Admissions Office by the end of the fourth week of the semester. *This option may not be changed to a letter grade.*

Audit (V)

Auditing a course means that the student registers for the course, pays the instructional and general fees, but receives no grades or credit. The student is expected to attend class and participate in class discussion or lab activities, but does not take any examinations. A symbol of "V" will appear on the student's transcript, indicating the course was taken as audit.

The request to take a course as an audit (V) basis must be submitted to the Admissions Office by the end of the first week of the semester. *This option may not be changed to a letter grade.*

Incomplete Grade (I)

An incomplete grade may be requested by a student who is progressing satisfactorily in a course, but for reasons beyond his/her control (e.g., illness, employment, death in the family), has not completed all requirements for the course when final grades are submitted by the instructor. An incomplete grade may not be used to allow a student extra time to avoid failing a course.

During the fall and spring semesters, the student may submit an incomplete grade request on an **Incomplete Grade Form** to the instructor by the end of the sixteenth week of the semester, but no earlier than the thirteenth week.

During the summer semester, alternative schedules govern the incomplete grade request process. In the five-week summer terms, the student may submit an incomplete grade request in the fourth or fifth week; in the eight-week summer terms, the student may submit the incomplete grade request in the sixth, seventh, or eighth week. Forms are available from the college's Admissions Office. If the instructor approves the request, he/she will forward the form to the Admissions Office for inclusion in the student's personal record. The Admissions Office will forward copies to the student, the instructor, and the appropriate dean.

The student must complete all conditions established by the instructor, as listed on the Incomplete Grade Form, by the end of the following academic semester. (A student receiving an incomplete grade at the end of spring or summer semester must complete all conditions by the end of the following fall semester.) Upon the student's completion of these conditions, the instructor will change the incomplete grade to the earned final grade. If the student fails to complete the necessary conditions within the prescribed time limit, the incomplete grade will automatically be changed to an "F" grade on the student's record.

Deans are authorized to convert an incomplete grade into a final grade in cases where instructors have severed connections with the college.

Withdrawal (W)

The notation of "W" will be made on the transcript for students who withdraw from any class. See the "Withdrawal from Classes" section on page 16 for the withdrawal procedure.

Administrative Withdrawal (AW)

Students will be administratively withdrawn from any class in which they are enrolled and have not attended during the first two weeks of the semester. Administrative withdrawals will occur at the beginning of the 3rd week of classes at zero percent refund (or during the first 20 percent of a flexibly scheduled class). A grade of an AW will be issued.

Not Available (NA)

The notation of "NA" will be made to indicate that no grade is available from the instructor. When the instructor submits the grade, the "NA" grade will be changed to the appropriate letter grade.

Repeating Coursework

The last grade received for a repeated course will thereafter be substituted for the former grade in calculating the student's cumulative point average. (The original grade will still be shown on the transcript.) Repeated courses are treated in different ways by colleges to which a student might transfer. Students should check with these colleges to understand fully how repeated courses will be treated on the transcript.

Students receiving financial aid should check with the Financial Aid Office to determine if a repeated course is aid eligible.

Grade Reports

Grade reports will be available online through student myLakeland accounts or can be mailed upon student request.

Grade Appeals

Grade appeals must be submitted to the instructor or appropriate dean. Requests for grade changes will be considered only during the term immediately following the one in which the grade was assigned with the exception of grades assigned during the spring semester which may be changed during the following summer or fall term.

Academic Forgiveness Program

The Academic Forgiveness program pertains to students who did not perform to their academic potential earlier in their studies at Lakeland but who have since demonstrated a higher level of achievement. The program is intended to help students improve their academic standing, achieve their educational goals, and encourage student success and completion. By removing previously earned credit hours and grades from GPA calculations, students are given the opportunity to have their accumulative grade point average reflect their more recent improved academic performance.

A student may petition for academic forgiveness if the following circumstances apply:

1. A marked change in the student's academic performance must be present, as evidenced by the successful completion of 12 or more credit hours, with a "C" or better earned in each of the most recent completed classes constituting the 12 or more credit hours. This will be referred to in the policy as a "period of recent success." (Courses below the 1000 level cannot be counted toward the 12 credit hours.).
2. The student must be enrolled in classes at Lakeland Community College the semester in which the petition is filed.

Students who have completed and earned a degree from Lakeland are not eligible.

When the above circumstances apply, the student may request that "D" and "F" grades that were earned prior to the period of recent success be forgiven. This is a one-time irreversible option. In some cases, forgiveness of "D" grades may affect a student's financial aid eligibility. It is the student's responsibility to confirm whether his/her eligibility will be impacted.

The process of petitioning for academic forgiveness is as follows:

1. Meet with a counselor to determine if academic forgiveness is an appropriate option.
2. If deemed appropriate, the counselor and student will fill out a petition form, specifying which "D" and "F" grades earned prior to the period of recent success are included in the request.
3. The counselor will forward the petition to the Associate Provost for Enrollment Management for review.
4. The Associate Provost for Enrollment Management will forward the recommended petition for academic forgiveness to the dean of the student's academic program for approval.
5. If approved, the student's record will be updated by the Registrar. The forgiven courses and grades will appear on the student's transcript with a notation stating "not calculated in GPA."
6. If a student disagrees with the counselor evaluation, he/she may appeal directly to the Associate Provost for Enrollment Management, whose decision will be considered final and will terminate the process within the college.

Academic Standards Policy

Academic Probation

1. A student will be placed on academic probation after attempting a minimum of 12 credit hours and both the semester GPA and cumulative GPA fall below 2.0.
2. A student on academic probation may attempt a maximum of 18 additional credit hours. The student will be removed from academic probation during the 18 credit hour period when his/her cumulative GPA is 2.0 or higher. Repeated courses will be counted toward the 18 credit hour total.

Academic Dismissal

The student will be dismissed after the 18 credit hours of academic probation if the cumulative GPA is below 2.0. The dismissal will be for the following semester.

A student dismissed at the end of fall semester will not be permitted to enroll in spring semester classes; a student dismissed at the end of spring semester will not be permitted to enroll in either summer or fall semester classes; a student dismissed at the end of summer sessions will not be permitted to enroll in fall semester classes.

Conditional Re-admission

A student dismissed for academic reasons will be eligible to apply for conditional readmission after one semester.

Conditional Re-admission requires the student to submit a written statement to the director of admissions/registrar at least six weeks prior to the semester for which the student is seeking conditional re-admission. If the student is not approved, they may appeal to the Academic Appeals Committee.

A student who is conditionally readmitted will be permitted to enroll for up to 18 additional credit hours. Enrollment will be limited to a maximum of 9 credit hours per semester until the cumulative grade point average is 2.0 or above. If, after attempting the additional 18 credit hours, his/her cumulative grade point average is still below 2.0, the student will be dismissed. Dismissal will be mandated for the following semester.

After a second dismissal, the student must appear before the Academic Appeals Committee to apply for re-admission. Appearing before the Academic Appeals Committee does not guarantee re-admission.

NOTE: A minimum cumulative grade point average of 2.0 is required for graduation. Some programs may have higher requirements.

Program Dismissal

A student may be dismissed from a program upon failure to meet minimum conduct and/or performance standards commensurate with the requirements of the specific program.

NOTE: See guidelines for individual programs for specific requirements.

Dean's List

In recognition of high academic achievement, a Dean's List is compiled for each of the fall and spring semesters.

The Provost has responsibility for compiling the list, and full- and part-time students are eligible for recognition.

To qualify for the Dean's List, a full-time student must complete a minimum of 12 credit hours and earn a minimum grade point average (GPA) of 3.5 for the semester. All credits must be in courses included in calculation of the GPA (see Grading System).

Part-time students (taking less than 12 credit hours per semester) must complete a minimum of six credit hours and earn a minimum grade point average (GPA) of 3.5 for the semester. All credits must be in courses included in calculation of the GPA (see Grading System).

Degree Completion

Graduation Requirements Policy

(A) All associate degrees (or arts, science, applied science, and technical studies) require successful completion of at least 60 semester hours with a 2.0 minimum grade point average (GPA). The student must have earned at least 20 credit hours at Lakeland Community College.

(B) Students earning an associate of applied business degree or associate of applied science degree are required to:

1. Pass all applicable technical courses for the particular major with a "C" grade or better.
2. Enroll and earn no fewer than 20 technical credits at Lakeland Community College for the particular major.
3. Maintain a 2.0 overall grade point average (GPA).

(C) Some programs of study may have additional program and/or grade point average requirements based upon accreditation standards. The students must review the requirements of the specific degree program to determine if there are additional requirements.

(D) **All students intending to graduate must file a petition to graduate in the Counseling Office by the deadline established by the college.**

Graduation Honors

Graduation honors are based upon the student's cumulative grade point average determined at the time of completing graduation requirements and will entitle the student to have the honors notation included on his/her transcript and diploma.

Students graduating with an associate degree who rank high scholastically are awarded special honors as follows:

Those who attain a cumulative grade point average (GPA) in the range of 3.9 to 4.0 are granted their degrees Summa Cum Laude.

Those who attain a cumulative grade point average (GPA) in the range of 3.75 to 3.89 are granted their degrees Magna Cum Laude.

Those who attain a cumulative grade point average (GPA) in the range of 3.5 to 3.74 are granted their degrees Cum Laude.

In addition, students must complete at least 50 percent of all degree requirements (credit hours) at Lakeland.

Commencement Honors

The commencement ceremony is held in May of each year. Students who attain a cumulative grade point average (GPA) in the range of 3.5 to 4.0 through the student's last fully completed and graded semester will be recognized in the commencement bulletin as graduating "with honors." Specific honors of Summa Cum Laude, Magna Cum Laude, and Cum Laude will not be reflected in the commencement bulletin.

Students entitled to commencement honors may wear the gold honors cord at the commencement ceremony.

Certificate Completion

Specially designed sequences leading to the awarding of certificates have been developed in cooperation with industry, commerce and local government to provide opportunities for persons seeking to improve their occupational skills or to retrain for new occupations. See page 35-37 for a complete list of certificate programs.

Courses in certificate sequences may be applicable to appropriate associate degree programs. Certificates are awarded for achieving satisfactory levels of proficiency in designated occupational or career fields.

To qualify for a certificate, a student must:

1. Complete all courses listed for the particular certificate.
2. Achieve at least a "C" grade point average (2.0) in the sequence.
3. Complete, at Lakeland, at least one-half the total number of required hours.
4. File an Application for Certificate at the start of the semester in which requirements will be completed.

Phi Theta Kappa Honor Society

Phi Theta Kappa is the only international honor society for two-year college students in the United States. Founded in 1918, it is dedicated to recognizing students for their academic achievement. Membership provides students with recognition in the form of the coveted Phi Theta Kappa pin, a stamp on their transcripts certifying they are members of the honor society, a gold seal on their diploma, and the privilege of wearing a gold stole and tassel at graduation. Members are eligible for transfer scholarships at four-year institutions and many competitive scholarships on the national, state, and local levels. In addition, members of Alpha Psi Rho, Lakeland's chapter of Phi Theta Kappa, have the opportunity to participate in numerous academic, service, and leadership activities, both at the college and in the Ohio region. Active members are also eligible to participate in the annual international convention. To be invited to join Phi Theta Kappa at Lakeland, a student must have earned a 3.5 grade point average after completing 12 credit hours.

For additional information, contact Professor James Dailey at 440.525.7533; Dr. Matthew Hiner at 440.525.7545; Dr. Andrea Musial at 440.525.7158; or visit the Phi Theta Kappa office in S-236, phone 440.525.7186.

Transcripts

A student wishing an official transcript of his/her records sent to another college, university or professional school, or for other purposes, must make a written request to the Registrar's Office or process a request via the Web at www.lakelandcc.edu. The written request must include the following:

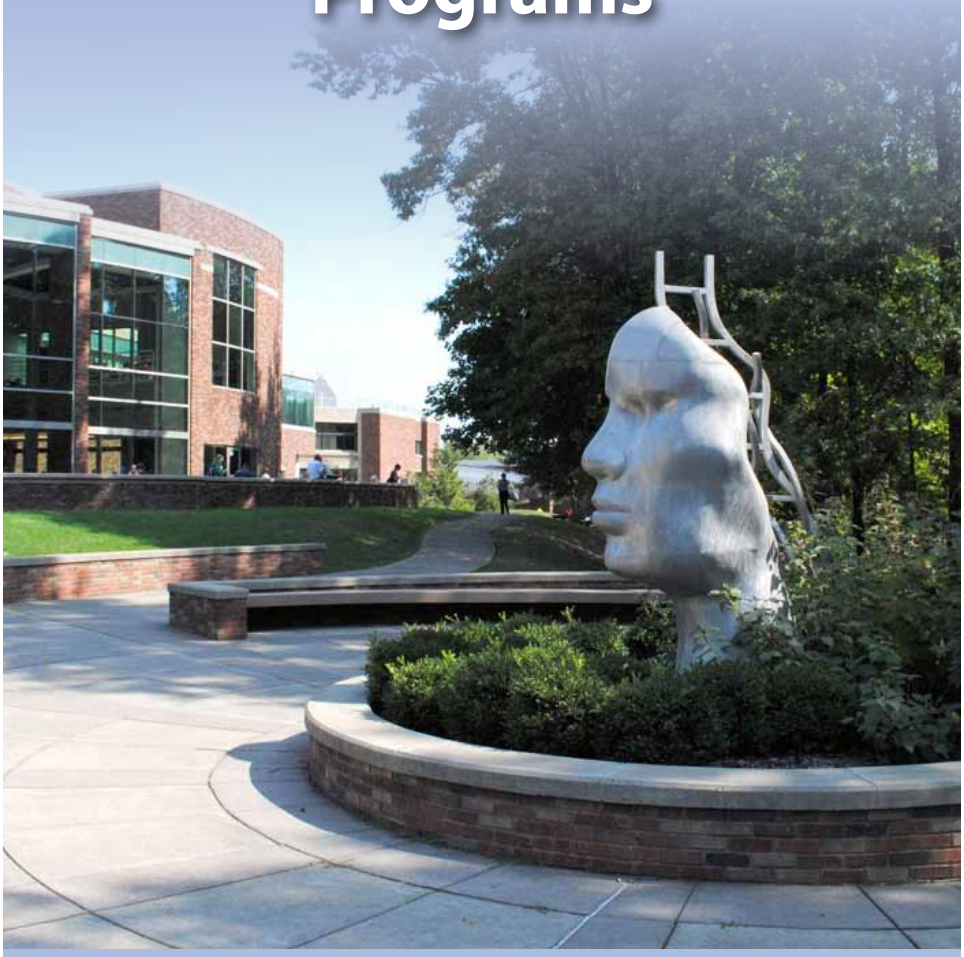
- Student's name
- Student's social security number or Lakeland ID number
- Signature of student
- Complete address to where the transcript needs to be sent
- $5 fee per transcript

Transcript requests and payment by credit card can also be made online via student myLakeland accounts.

Official transcripts will not be released until all financial obligations to the college are satisfied.

Unofficial transcripts are available at no charge upon request in the Registrar's Office or via student myLakeland accounts.

Degree and Certificate Programs



Lakeland
COMMUNITY COLLEGE

Programs at a Glance

Associate of Arts Degree

Associate of Science Degree

Associate of Applied Business

Applied Studies - Computer, Design and Engineering Technologies

Graphic Design

Information Technology and Computer Science:

- Application Programming and Development Concentration
- Computer Science/Software Engineering Concentration
- Database Administrator Concentration
- Operating Systems/Networking Concentration
- User Support Specialist Major
- Web Content Developer Concentration

Media Technology

- Audio Recording and Production Technical Major
- Interactive Media Design and Delivery Technical Major
- Radio Production and Broadcast Technical Major
- Video Production and Broadcast Technical Major

Applied Studies - Management

Accounting

Business Management:

- Business Information Management Concentration
- Entrepreneurship Concentration
- General Management Concentration
- Human Resources Management Concentration
- Marketing Concentration
- Parks and Recreation Management

Paralegal Studies

Associate of Applied Science

Applied Studies - Computer, Design and Engineering Technologies

Civil Engineering Technology:

- Civil Engineering Technology
- Construction Management

Computer Integrated Manufacturing Technology:

- General Manufacturing Major
- Maintenance and Repair Concentration

Electronic Engineering Technology:

- Electronic Engineering Technology
- Industrial Electronics Concentration

Mechanical Engineering Technology:

- Computer Aided Design Concentration
- Mechanical Engineering Technology

Network Infrastructure Engineering Technology:
- Cisco Network Infrastructure Concentration
- Microsoft Network Infrastructure Concentration
- Network Infrastructure Security Concentration

Nuclear Engineering Technology

Applied Studies - Education, Human and Public Services
Criminal Justice-Corrections
Criminal Justice-Law Enforcement
Early Childhood Education
Emergency Management Planning and Administration
Fire Science Technology
Human Services

Applied Studies - Health Technologies
Biotechnology Science
Dental Hygiene
Health Information Management Technology
Histotechnology
Medical Laboratory Technology
Multi-Skilled Health Technology
Nursing (RN)
Radiologic Technology
Respiratory Therapy Technology
Surgical Technology

Arts and Sciences - Language and Communication
Applied American Sign Language Studies

Arts and Sciences - Social Science
Geospatial Technology

Associate of Technical Studies Degree

Applied Studies - Computer, Design and Engineering Technologies
Computer Information Technology
Electrical Construction Technology
Electrical Technology
Industrial Welding
Tool and Die Technology

Applied Studies - Health Technologies
Nuclear Medicine
Radiologic Technology

Applied Studies - Management
Culinary Arts Technology

Certificates

In addition to the associate degree programs, specially designed sequences leading to the awarding of certificates have been developed in cooperation with industry, commerce, and local government to provide opportunities for persons seeking to improve their occupational skills or to retrain for new occupations.

Where applicable, certificate programs are listed directly after the corresponding associate degree program. Courses in certificate sequences may be applicable to appropriate associate degree programs. Certificates are awarded for achieving satisfactory levels of proficiency in designated occupational or career fields.

To qualify for a certificate, a student must:

1. Complete all courses listed for the particular certificate.
2. Achieve at least a "C" grade point average (2.0) in the sequence.
3. Complete, at Lakeland, at least one-half the total number of required hours.
4. File an Application for Certificate at the start of the semester in which requirements will be completed.

Certificate programs include:

Associate of Arts
International Studies

Applied Studies - Computer, Design and Engineering Technologies
Civil Engineering:
- Construction Management
- Surveying Technology

Computer Integrated Manufacturing:
- CNC Operator
- CNC Set-Up and Programming Technology
- Computer Integrated Manufacturing Technology
- Industrial Computer Hardware Technician
- Production Shift Leader/Manufacturing Management
- Tool and Die Technology
- Tool Room/Maintenance Machinist Apprentice

Electrical Construction Technology:
- Electrical Construction

Electronic Engineering Technology:
- A+ Computer Maintenance and Repair
- Advanced Electronics Technology
- Electronic Systems Fundamentals
- Industrial Electronics

Graphic Design for the Web
Industrial Welding:
- FCAW and GMAW (MIG/MAG) Welding
- GTAW (TIG) Welding
- Oxyfuel Gas Welding and Cutting
- Pipe Welding
- Stick Welding

Information Technology and Computer Science:
- Computer User
- Graphic Design for the Web
- IT Foundations
- IT Professional
- IT Specialist
- Red Hat Certified Engineer (RHCE) Preparation
- Red Hat Certified System Administrator (RHCSA) Preparation

Mechanical Engineering:
- AutoCAD Operator
- CAD Design

Media Technology:
- Animation and Cartoon Arts
- Audio Engineering and Production
- Interactive Entertainment
- Interactive Media
- Radio Production and Broadcast
- Video Production and Broadcast

Network Infrastructure Engineering Technology:
- Network Infrastructure Security Specialist

Photography

Applied Studies - Education, Human and Public Services

Emergency Management Planning and Administration

Fire Science Technology

Human Services:
- Case Management
- Chemical Dependency
- Pre-Social Work Bridge

Applied Studies - Health Technologies

Biotechnology Science

Multi-Skilled Health Technology:
- Administrative Medical Office Assistant
- Coding
- Electrocardiography
- Emergency Medical Technology-Basic
- Emergency Medical Technology-Paramedic
- Health and Wellness
- Medical Assisting
- Personal Trainer
- Phlebotomy

Radiologic Technology:
- Computed Tomography
- Magnetic Resonance Imaging

Degree and Certificate Programs

Applied Studies - Management

Accounting:
- Family Financial Planning
- Financial Accounting
- General Accounting
- Small Business Accounting

Business Management:
- Business Information Management
- Business Management
- E-Business
- Entrepreneurship
- Human Resources Management
- Leadership
- Marketing
- Office Communications
- Ohio Real Estate Broker
- Ohio Real Estate Salesperson

Paralegal Studies

Arts and Sciences - Sciences and Math

Chemical Technician

Arts and Sciences - Social Science

Geospatial Technology

Alternative Academic Experiences

Cooperative Education

Cooperative education (co-op) is a planned paid work experience that is separate from but relates to formal classroom instruction in a student's specialized area of study. A faculty advisor is assigned to the student to assist in planning the work experience and monitoring performance. College-level co-op work experience requires developing new program-related skills, not simply performing tasks for which the student is already qualified. Employed students may be able to use their current employment for co-op experience if approved as suitable prior to registration.

Co-op can be used as elective credit for certain degree programs requiring business technology electives (Accounting, Business Management, Information Technology and Computer Science, and Media Technology). Co-op credit is also available to students interested in work experience in engineering technology, or Theatre and Performing Arts.

See the following cooperative education descriptions:

BUSM 2800 Business Co-op Experience

THEA 2800 Theatre and Performing Arts Co-op Experience

ENGR 2800 Engineering Co-op Experience

Interested students must meet the prerequisites for the appropriate co-op experience and contact the Experiential Education Coordinator located in the Career Services Center prior to registering. One semester credit will be awarded for a minimum of 12 hours of cooperative work experience per week for 15 weeks (180 hours).

A maximum of 9 semester credits may be earned in co-op work experience, field experience, and practicum in an associate degree program.

Field Experience

Field experience is a planned work activity which relates to a student's occupational objectives and which a student takes with permission of a faculty advisor. Interested students must meet the prerequisites for field experience.

See the following course descriptions:

FLDX 1000 – Field Experience

NUET 2050 – Nuclear Field Experience

To register for NUET 2050, students can contact the Nuclear Engineering Technology department chair.

Guided Studies Program

Lakeland's Guided Studies Program provides students the opportunity to pursue an academic area of interest not offered through the regular college curriculum. Students in the program work individually or in a small group with a faculty member in developing projects that explore special topics in depth.

Guided Studies projects should extend beyond the scope of required work in credit courses and may not duplicate the content of an existing college course. Guided Studies projects are limited to three credit hours each, and students may apply a maximum of six Guided Studies credits toward an associate degree program. Students must also have completed at least 30 credits of study prior to entering the program.

Students wishing to take part in the Guided Studies Program must develop a general proposal for the project they would like to conduct and present it to an appropriate faculty member for consideration. Before registering for the program, students must obtain approval from the Guided Studies Committee for each proposal.

See the following Guided Studies courses:

GDSP 2000 Guided Studies-Individual

GDSP 2000 Guided Studies-Group

College Tech Prep

The Lakeland Tech Prep Center collaborates with four Career Tech Planning Districts to serve students from over 30 high schools in Lake, Geauga, Ashtabula, and eastern Cuyahoga counties. College Tech Prep is a concentrated four-year curriculum designed to prepare students for college and careers as technicians in business technology, engineering technology, information technology, construction management, and healthcare. The program begins in the 11th grade of high school and continues through an Associate Degree at Lakeland Community College. The program also provides students with the opportunity to pursue a baccalaureate degree in their field of study. Lakeland's College Tech Prep program has been recognized by the American Association of Community Colleges (AACC) for its "Excellence in Education," by the National Tech Prep Network for "Exemplary Worksite Experience," and by the Mentor Area Chamber of Commerce as "Organization of the Year for 2004."

Guidelines for High School Tech Prep Graduates:

- Complete admissions procedures (as listed in admissions/registration section).
- To apply for College Tech Prep Articulated Credit, an Articulation and Transcript Release form needs to be completed by the student and high school teacher. Students complete this form in their College Tech Prep classroom senior year. This form is then submitted to the College Tech Prep Admissions Coordinator for processing. An official final high school transcript must be included with the Articulation application along with copies of any certification documents. If a student does not complete the Articulation and Transcript Release form in their senior classroom, they may contact the College Tech Prep Admissions Coordinator to complete the form. In

addition, students who want Articulation Credit by Certification, Exam or Waiver, should obtain a Request for Credit/Waiver for Courses form from the Admissions Office or the College Tech Prep Office in E-222. The eligibility criteria for College Tech Prep Articulated credit is available in the College Tech Prep Office, the Lakeland Community College Web site and the Counseling Office Transfer Center.

- Tech Prep Allied Health high school students may apply to be placed on the appropriate waiting list as soon as they complete their junior year and have obtained the appropriate ACT/SAT score and complete admissions procedures as defined in the health technologies section of this catalog.

COLLEGE TECH PREP - HIGH SCHOOL
(11th & 12th Grades)

Pathways

Alternative Energy
CAD Technology
Computer Information Systems
Construction
Criminal Science
Early Childhood Education
Electronics/Networking (CNET)
Exercise Science
Graphic Arts
Health Care Technologies
HVAC Construction
Interactive Media Technology
Marketing

Participating School Districts

Ashtabula Co. JVS
-Ashtabula and Trumbull counties
Auburn Career Center
-Lake and Geauga counties
Lake Shore Compact
-Lake and eastern Cuyahoga counties
Mayfield Excel T.E.C.C.
-Geauga, Portage, and eastern Cuyahoga counties

LAKELAND COMMUNITY COLLEGE
(2-Year Programs)

Associate of Applied Science Degree

Engineering Technologies:

Civil Engineering Technology
Computer Integrated Manufacturing Technology
- General Manufacturing Major
- Maintenance and Repair Concentration
Construction Management
Electronic Engineering Technology
- Electronic Engineering Technology
- Industrial Electronics Concentration
Mechanical Engineering Technology
- Computer Aided Design Concentration
- Mechanical Engineering Technology
Network Infrastructure Engineering Technology
- Cisco Network Infrastructure Concentration
- Microsoft Network Infrastructure Concentration
- Network Infrastructure Security Concentration
Nuclear Engineering Technology

Health Technologies:

Biotechnology Science
Dental Hygiene
Health Information Management Technology
Medical Laboratory Technology
Multi-Skilled Health Technology
Nursing (R.N.)
Radiologic Technology
Respiratory Therapy Technology
Surgical Technology

Associate of Applied Business Degree

Information Technology and Computer Science:

- Application Programming and Development Concentration
- Computer Science/Software Engineering Concentration
- Database Administrator Concentration - Microsoft Emphasis
- Database Administrator Concentration - Oracle Emphasis
- Operating Systems/Networking Concentration
- User Support Specialist Major
- Web Content Developer Concentration

Graphic Design Degree

Certificate Programs

Media Technology:

- Animation and Cartoon Arts Certificate
- Audio Engineering and Production Certificate
- Interactive Entertainment Certificate
- Interactive Media Certificate
- Radio Production and Broadcast Certificate
- Video Production and Broadcast Certificate

Associate of Arts (Transfer) or Associate of Science (Transfer) Degrees

The Associate of Arts and Associate of Science degrees are normally pursued by students intending to transfer to a senior institution for the completion of a Bachelor of Arts or Science degree.

EMPLOYMENT
as a skilled technician related to College Tech Prep area of study

BACCALAUREATE DEGREE
Options for degree completion are available through transfer modules and/or articulation agreements with several Ohio colleges and universities, including Cleveland State University, Franklin University, Kent State University, University of Toledo, and Ursuline College. See the Transfer Center for specific information.

Lakeland Student Learning Outcomes

The **Lakeland Community College Student Learning Outcomes** represent the College's vision of skills graduates should possess to succeed throughout their professional and personal lives. Learning actively, thinking critically, communicating clearly, using information effectively, and interacting in diverse environments are essential skills. The Student Learning Outcomes are interrelated and are woven throughout the curriculum.

Learns Actively

The engaged student participates directly in learning activities. The learner:

- takes responsibility for his/her own learning
- uses effective learning strategies
- reflects on effectiveness of his/her own learning strategies

Thinks Critically

The critical thinker uses reason, ingenuity, and knowledge to examine relevant issues or ideas and solve problems. The learner:

- identifies an issue or idea
- explores perspectives relevant to an issue or idea
- identifies and critiques options or positions
- selects an option or position
- implements and reflects on a selected option or position

Communicates Clearly

The effective communicator demonstrates the ability to articulate and exchange ideas using multiple forms of expression. The learner:

- uses correct spoken and written English
- conveys a clear purpose
- presents ideas logically
- comprehends and uses the appropriate form(s) of expression
- engages in an exchange of ideas

Uses Information Effectively

The 21st century learner accesses and manages reliable information effectively and responsibly. The learner:

- develops an effective search strategy
- uses technology to access and manage information
- uses selection criteria to choose appropriate information
- uses information responsibly

Interacts in Diverse Environments

The responsible citizen develops awareness of the diversity of human experience, understanding and responding to interpersonal, historical, cultural, and global contexts. The learner:

- demonstrates knowledge of diverse ideas and values
- describes ways in which issues are embedded in relevant contexts
- collaborates with others in a variety of situations
- acts with respect for others

Associate of Arts Degree Requirements (9000)

The associate of arts (AA) is normally pursued by students intending to transfer to a senior institution for the completion of a Bachelor of Arts or Science degree. Typical areas of study may include art, business, communication, economics, education, English, geography, history, journalism, modern languages, music, philosophy, photography, political science, prelaw, psychology, sociology, and social work. Students who complete this degree will also satisfy all requirements for the State of Ohio Transfer Module. See pages 50-52 for "Transfer Guidelines."

The associate of arts degree requires successful completion of 61 semester credits with a 2.0 minimum grade point average (GPA). Students must have been enrolled in and earned at least 20 semester credits at Lakeland Community College. Courses below the 1000 level are not applicable to degree requirements, e.g., ENGL 0111, MATH 0745, etc.

Students must earn the 61 semester credits as listed below. **Students must successfully complete at least 36 of the total minimum 61 credits required for the degree from the courses listed in the Transfer Module shown on pages 50-52.**

AREA	MINIMUM CREDITS	REQUIREMENTS

(NOTE: The minimum number of credits required is shown for each area. Students may apply credits in excess of these minimums to the Electives area.)

First Year Experience	1	Students must successfully complete FIRST YEAR EXPERIENCE: FYEX 1000 *(**NOTE:** FYEX 1000 is a degree requirement for all new first time in college students.)*
Communications	9	Students must successfully complete COMMUNICATION STUDIES: COMM 1000 **AND** ENGLISH: ENGL 1110 ***OR*** ENGL 1111, and ENGL 1120 ***OR*** ENGL 1121 *(**NOTE:** Placement into the appropriate English course is required. See pages 13 and 24.)*
Arts and Humanities/ Social and Behavioral Sciences	18	Students must successfully complete courses as shown below: **Arts and Humanities:** Students must complete at least 6 credits from within the following list of courses. These credits must be earned from at least TWO discipline areas within the list. ART: ARTS 1120, 2220, 2230 HUMANITIES: HUMX 1100, 1200, 1300 INTERDISCIPLINARY STUDIES: IDST 2400 LITERATURE: ENGL 2210, 2220, 2225, 2230, 2235, 2240, 2245, 2248, 2250, 2260, 2263, 2270, 2275, 2276, 2280, 2290, 2296 MUSIC: MUSC 1200, 1215, 1800, 2200, 2250 PHILOSOPHY: PHIL 1300, 1500, 2000, 2600, 2700 PHOTOGRAPHY: PHOT 1000 **Social and Behavioral Sciences:** Students must complete at least 6 credits from within the following two lists of courses. These credits must be earned from at least ONE Behavioral Sciences course and at least ONE Macro-Social Sciences course. Behavioral Sciences: INTERDISCIPLINARY STUDIES: IDST 1200 PSYCHOLOGY: PSYC 1400, 1500, 1700, 2200, 2300, 2400, 2500, 2600, 2700, 2800 SOCIOLOGY: SOCY 1150, 1190, 2000, 2250, 2260, 2270, 2280, 2290

		Macro-Social Sciences: ECONOMICS: ECON 1150, 2500, 2600 GEOGRAPHY: GEOG 1500, 1600, 1800, 2000, 2500 HISTORY: HIST 1150, 1250, 1450, 1550, 2150, 2250, 2450, 2600, 2700 POLITICAL SCIENCE: POLS 1300, 2100, 2200, 2300, 2400, 2500 URBAN STUDIES: URST 2000 Students must complete the remaining credits needed to meet the Arts and Humanities/Social and Behavioral Sciences requirement from any of the three lists of courses shown above.
Mathematics	3	Students must successfully complete at least ONE course chosen from the following: MATHEMATICS: MATH 1330, 1550, 1600, 1650, 1700, 1890, 2400, 2500, 2600, 2700, 2800, 2850 PHILOSOPHY: PHIL 2600 ***(NOTE:*** Placement into the appropriate Mathematics course is required. See page 13. Students should consult with a counselor to select a mathematics requirement that will support their educational objectives and fulfill the mathematics requirement at the transfer institution.)
Natural Sciences	6	Students must successfully complete at least TWO courses chosen from the following, ONE of which must be a lab course: BIOLOGY: BIOL 1010, 1020, 1140, 1150, 1160, 1170, 1190, 1200, 1510, 1520, 2210, 2220, 2700 CHEMISTRY: CHEM 1050, 1100, 1150, 1500, 1600, 2000, 2500, 2600 GEOGRAPHY: GEOG 1550 GEOLOGY: GEOL 1100, 1200, 1300 PHYSICAL SCIENCE: PSCI 1100, 1300, 1400 PHYSICS: PHYS 1500, 1550, 1610, 1620, 2410, 2420 (***NOTE:*** BIOL 1200 is best suited for health technology students.) (***NOTE:*** BIOL 1010, BIOL 1020, BIOL 1140, PHYS 1500 and PHYS 1550 are not lab courses.)
Electives	24	Students should consult with a counselor to select electives that will support their educational objectives. Elective credits should be focused for the most part in the Communications, Arts and Humanities, and Social and Behavioral Sciences categories. Students may apply excess credits from each of the degree areas shown above to the Electives area. Students should complete the remaining credits for the degree from either additional Transfer Module courses or from any college-level courses as general electives. (NOTE: The one-credit physical activity courses (PEHR 1101 through PEHR 1125 and DANC 1108 through DANC 1110) cannot be applied to the degree requirements.) Some four-year colleges require completion of one or two years of course work in Modern/Foreign Languages. Students should check to see if the institution to which they plan to transfer includes this requirement. Students seeking to improve their computer skills/knowledge needed at Lakeland and elsewhere are encouraged to take ITIS 1000 or ITIS 1005, which meets the Transfer Assurance Guide (TAG) requirement for Ohio's Articulation and Transfer Policy.
Total Minimum Credits	**61**	

Associate of Science Degree Requirements (9100)

The associate of science (AS) degree program is normally pursued by students intending to transfer to a senior institution for the completion of a Bachelor of Science degree. Typical areas of study may include engineering, earth sciences, mathematics, physics, biology, chemistry, computer science, or pre-medicine. Students who complete this degree will also satisfy all requirements for the State of Ohio Transfer Module. See page 50-52 for "Transfer Guidelines."

The associate of science degree (AS) requires successful completion of 61 semester credits with a 2.0 minimum grade point average (GPA). Students must have been enrolled in and earned at least 20 semester credits at Lakeland Community College. Courses below the 1000 level are not applicable to degree requirements, e.g., ENGL 0111, MATH 0745, etc.

Students must earn the 61 semester credits as listed below. **Students must successfully complete at least 36 of the total minimum 61 credits required from the degree from the courses listed in the Transfer Module shown on pages 50-52:**

(NOTE: The minimum number of credits required is shown for each area. Students may apply credits in excess of these minimums to the Electives area.)

AREA	MINIMUM CREDITS	REQUIREMENTS
First Year Experience	1	Students must successfully complete FIRST YEAR EXPERIENCE: FYEX 1000 (***NOTE:*** *FYEX 1000 is a degree requirement for all new first time in college students.)*
Communications	6	Students must successfully complete ENGLISH: ENGL 1110 ***OR*** ENGL 1111, and ENGL 1120 ***OR*** ENGL 1121 (***NOTE:*** Placement into the appropriate English course is required. See pages 13 and 24.)
Arts and Humanities	6	Students must successfully complete at least ONE course from at least TWO discipline areas within the following list of courses: ART: ARTS 1120, 2220, 2230 HUMANITIES: HUMX 1100, 1200, 1300 INTERDISCIPLINARY STUDIES: IDST 2400 LITERATURE: ENGL 2210, 2220, 2225, 2230, 2235, 2240, 2245, 2248, 2250, 2260, 2263, 2270, 2275, 2276, 2280, 2290, 2296 MUSIC: MUSC 1200, 1215, 1800, 2200, 2250 PHILOSOPHY: PHIL 1300, 1500, 2000, 2600, 2700 PHOTOGRAPHY: PHOT 1000
Social and Behavioral Sciences	6	Students must successfully complete at least ONE Behavioral Sciences course and at least ONE Macro-Social Sciences course from the following lists of courses: Behavioral Sciences: INTERDISCIPLINARY STUDIES: IDST 1200 PSYCHOLOGY: PSYC 1400, 1500, 1700, 2200, 2300, 2400, 2500, 2600, 2700, 2800 SOCIOLOGY: SOCY 1150, 1190, 2000, 2250, 2260, 2270, 2280, 2290 Macro-Social Sciences: ECONOMICS: ECON 1150, 2500, 2600 GEOGRAPHY: GEOG 1500, 1600, 1800, 2000, 2500 HISTORY: HIST 1150, 1250, 1450, 1550, 2150, 2250, 2450, 2600, 2700 POLITICAL SCIENCE: POLS 1300, 2100, 2200, 2300, 2400, 2500 URBAN STUDIES: URST 2000

Mathematics and Natural Sciences	18	Students must successfully complete courses as shown below: Mathematics: Students must successfully complete at least 3 credits from the following list of courses: MATH 1650, 1700, 1890, 2400, 2500, 2600, 2700, 2800, 2850 ***(NOTE:*** Placement in the appropriate Mathematics course is required. See page 13.) ***(NOTE:*** MATH 2500, MATH 2600 and/or MATH 2700 are recommended for Physics, Chemistry and Engineering majors.} Natural Sciences: Students must successfully complete at least 8 credits, including ONE sequence of courses within a discipline area chosen from the following: BIOLOGY: (BIOL 1510 and BIOL 1520) ***OR*** (BIOL 2210 and BIOL 2220) ***OR*** CHEMISTRY: (CHEM 1500 and CHEM 1600) ***OR*** PHYSICS: (PHYS 1610 and PHYS 1620) ***OR*** (PHYS 2410 and PHYS 2420) ***(NOTE:*** BIOL 1510 and BIOL 1520 are recommended for Biology majors.) ***(NOTE:*** CHEM 1500 and CHEM 1600 are recommended for Chemistry majors.) ***(NOTE:*** PHYS 2410 and PHYS 2420 are recommended for Physics, Chemistry, or Engineering majors.} Students must complete the remaining credits to meet the Mathematics and Natural Sciences requirements from the following list of courses: MATHEMATICS: MATH 1330, 1550, 1650, 1700, 1890, 2400, 2500, 2600, 2700, 2800, 2850 BIOLOGY: BIOL 1140, 1150, 1160, 1170, 1190, 1200, 1510, 1520, 2210, 2220, 2700 CHEMISTRY: CHEM 1050, 1100, 1150, 1500, 1600, 2000, 2500, 2600 GEOGRAPHY: GEOG 1550 GEOLOGY: GEOL 1100, 1200, 1300 PHYSICAL SCIENCE: PSCI 1100, 1300, 1400 PHYSICS: PHYS 1500, 1550, (PHYS 1610 or PHYS 2410), (PHYS 1620 or PHYS 2420) (***NOTE:*** BIOL 1200 is best suited for health technology students.) ***(NOTE:*** *Students who have completed the BIOL 1510 and BIOL 1520 sequence and wish to fulfill their natural science requirement with additional biology courses should select from the following courses: BIOL 1170, 1190, 2210, 2220, 2700.)* (***NOTE:*** *Students who have completed the CHEM 1500 and CHEM 1600 sequence and wish to fulfill their natural science requirement with additional chemistry courses should select from the following courses: CHEM 2000, 2500, 2600.)*
Electives	24	Students should consult with a counselor to select electives that will support their educational objectives. Elective credits should be focused for the most part in the Mathematics and Natural Sciences categories. Students may apply excess credits from each of the degree areas shown above to the Electives area. Students should complete the remaining credits for the degree from either additional Transfer Module courses or from any college-level courses as general electives. (NOTE: The one-credit physical activity courses (PEHR 1101 through PEHR 1125 and DANC 1108 through DANC 1110) cannot be applied to the degree requirements.) Some four-year colleges require a course in public speaking, which is COMM 1000 at Lakeland. Students should check to see if the institution to which they plan to transfer requires this Transfer Module course. Some four-year colleges require completion of one or two years of course work in Modern/Foreign Languages. Students should check to see if the institution to which they plan to transfer includes this requirement. Students seeking to improve their computer skills/knowledge needed at Lakeland and elsewhere are encouraged to take ITIS 1000 or ITIS 1005, which meets the Transfer Assurance Guide (TAG) requirement for Ohio's Articulation and Transfer Policy.
Total Minimum Credits	**61**	

Degree and Certificate Programs

Articulation Agreements

To facilitate the transfer of credits from Lakeland to other four-year schools, Lakeland has developed numerous general articulation agreements and detailed, course-by-course transfer guides for over 50 Ohio colleges and universities. In addition, Lakeland has developed agreements that facilitate earning a four-year degree through distance learning or on Lakeland's campus. The Transfer Center, located in the Counseling Center area, is the central clearinghouse for information for students wishing to explore their options regarding completing a four-year degree. Also in the Transfer Center, is a calendar of campus visits by representatives from four-year institutions and college catalogs for student reference. Students should consult with a Lakeland counselor before choosing courses they plan to transfer to another institution.

University Parallel, Transfer Program

Lakeland Community College provides a wide variety of arts and sciences or general education course offerings which parallel those found in the first two years of a university and which satisfy lower division (freshman/sophomore) requirements. Therefore, this degree program is the one normally pursued by students intending to transfer to a senior institution for the completion of their baccalaureate work. A program in the arts and sciences can also provide a learning foundation in communications, social sciences, humanities, and sciences. Students with this basic background should be prepared to pursue their individual objectives and to participate as effective citizens in a changing and complex society.

Transfer Guidelines

Transfer guides for specific colleges and universities which list the transfer institution's program requirements are available in the Counseling Center. These guides are designed to assist the student in the selection of Lakeland courses which lead to a baccalaureate degree in specific fields such as engineering, mathematics, physics, biology, chemistry, geology, other sciences, pre-medicine, education, social work, art, psychology, music, business, computer sciences, English, and history. Transfer institutions have unique requirements and students are strongly urged to make early inquiry of a counselor to ensure selection of courses which will meet those requirements.

** Students should note that degree programs at Ohio institutions are constantly changing. Lakeland does not control the transfer and application of courses to other institutions. Therefore, students must contact and verify course transfer with specific transfer institutions.*

Transfer Module

Institutional Transfer

The Ohio Board of Regents in 1990, following a directive of the 119th Ohio General Assembly, developed the Ohio Articulation and Transfer Policy to facilitate students' ability to transfer credits from one Ohio public college or university to another in order to avoid duplication of course requirements. A subsequent policy review and recommendations produced by the Articulation and Transfer Advisory Council in 2004, together with mandates from the 125th Ohio General Assembly in the form of Amended Substitute House Bill 95, have prompted improvements of the original policy. While all state-assisted colleges and universities are required to follow the Ohio Articulation and Transfer Policy, independent colleges and universities in Ohio may or may not participate in the transfer policy. Therefore, students interested in transferring to independent institutions are encouraged to check with the college or university of their choice regarding transfer agreements. In support of improved articulation and transfer processes, the Ohio Board of Regents will establish a transfer clearinghouse to receive, annotate, and convey transcripts among state-assisted colleges and universities. This system is designed to provide standardized information and help colleges and universities reduce undesirable variability in the transfer credit evaluation process.

Transfer Module

The Ohio Board of Regents' Transfer and Articulation Policy established the Transfer Module, which is a subset or entire set of a college or university's general education curriculum in A.A., A.S. and baccalaureate degree programs. Students in applied associate degree programs may complete some individual transfer module courses within their degree program or continue beyond the degree program to complete the entire transfer module. The Transfer Module contains (54-60 quarter hours) or 36-40 semester hours of course credit in English composition (minimum 5-6 quarter hours or 3 semester hours); mathematics, statistics and formal/symbolic logic (minimum of 3 quarter hours or 3 semester hours); arts/humanities (minimum 9 quarter hours or 6 semester hours); social and behavioral sciences (minimum of 9 quarter hours or 6 semester hours); and natural sciences (minimum 9 quarter hours or 6 semester 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 Transfer Module. Courses for the 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 state-assisted university, technical and community college is required to establish and maintain an approved Transfer Module.

Transfer Module course(s) or the full module completed at one college or university will automatically meet the requirements of individual Transfer Module course(s) or the full 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 Transfer Module at Institution S (sending institution) and then transfers to Institution R (receiving institution) is said to have completed the Transfer Module portion of Institution R's general education program. Institution R, however, may have general education courses that go beyond its Transfer Module. State policy initially required that all courses in the Transfer Module be completed to receive its benefit in transfer. However, subsequent policy revisions have extended this benefit to the completion of individual Transfer Module courses on a course-by-course basis.

Transfer Assurance Guides

Transfer Assurance Guides (TAGs) comprise Transfer Module courses and additional courses required for an academic major. A TAG is an advising tool to assist Ohio university and community and technical college students planning specific majors to make course selections that will ensure comparable, compatible, and equivalent learning experiences across the state's higher-education system. A number of area-specific TAG pathways in the arts, humanities, business, communication, education, health, mathematics, science, engineering, engineering technologies, and the social sciences have been developed by faculty teams.

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.

Career Technical Assurance Guides

Students who successfully complete specified technical programs are eligible to have technical credit transfer to public colleges and universities. This transfer of credit is described in Career Technical Assurance Guides (CTAG). CTAGs are advising tools that assist students moving from Ohio secondary and adult career-technical institutions to Ohio public institutions of higher education.

Conditions for Transfer Admission

1. Ohio residents with associate degrees from state-assisted institutions and a completed, approved Transfer Module shall be admitted to a state 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 out-of-state associate degree graduates and transfer students.
2. When students have earned associate degrees but have not completed a Transfer Module, they will be eligible for preferential consideration for admission as transfer students if they have grade point averages of at least a 2.0 for all previous college-level courses.
3. In order to encourage completion of the baccalaureate degree, students who are not enrolled in an A.A. or A.S. degree program but have earned 60 semester (or 90 quarter hours) or more of credits toward a baccalaureate degree with a 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.
4. Students who have not earned an A.A. or A.S. degree or who have not earned 60 semester hours (or 90 quarter hours) of credit with a grade point average of at least a 2.0 for all previous college-level courses are 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.

Admission to a given institution, however, does not guarantee that a transfer student will be automatically admitted to all majors, minors, or fields of concentration at 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.

Acceptance of Transfer Credit

To recognize courses appropriately and provide equity in the treatment of incoming transfer students and students native to the receiving institution, transfer credit will be accepted for all successfully completed college-level courses completed in and after fall 2005 from Ohio state-assisted institutions of higher education. Students who successfully completed A.A. or A.S. degrees prior to fall 2005 with a 2.0 or better overall grade point average would also receive credit for all college-level course they have passed. (See Ohio Articulation and Transfer Policy, Definition of Passing Grade and Appendix D) While this reflects the baseline policy requirement, individual institutions may set equitable institutional policies that are more accepting.

Pass/fail courses, credit by examination courses, experiential learning courses, and other nontraditional credit courses that meet these conditions will also be accepted and posted to the student record.

Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Students should use the Transfer Module, Transfer Assurance Guides, and Course Applicability System for guidance in planning the transfer process. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore year. This will enable students to plan

and pursue a course of study that will articulate with the receiving institution's major. **Students are encouraged to seek further information regarding transfer from both a Lakeland counselor and the college or university to which they plan to transfer.**

Appeals Process

Following the evaluation of a student transcript from another institution, the receiving institution shall provide the student with a statement of transfer credit applicability. At the same time, the institution must inform the student of the institution's appeals process. The process should be multi-level and responses should be issued within 30 days of the receipt of the appeal.

Steps in the Appeal Process

If a student believes that transfer credit has been denied by the college, an appeal process is provided for resolution of the dispute.

1. The appeal process begins when the student takes the concern to the transfer evaluator who has completed the transcript evaluation to request reconsideration of the course(s) in question.
2. If the matter cannot be resolved, the student may request that the associate provost for enrollment management review the transfer evaluation and provide the student a written response within ten (10) business days.
3. If the student is not satisfied with the decision of the associate provost, the student may submit a written appeal to the executive vice president and provost within five (5) business days. The executive vice president and provost will convene an ad hoc panel of three (3) faculty members representing three (3) of the college's academic divisions to review the student's appeal.
4. The panel will provide a written decision to the student within (30) days. The decision of the panel is final.
5. Appeals must be initiated by the student within ninety (90) days after the student has received a written copy of the transfer evaluation.

Transfer Module (9099)

The Transfer Module consists of 36-40 semester credit hours of introductory courses in English, mathematics, arts/humanities, social science, and natural science. Students should follow the specific requirements below when selecting courses for the Transfer Module. Students are encouraged to meet regularly with a Lakeland counselor to monitor their progress toward completing the Transfer Module.

***(NOTE:** Students who complete the Associate of Arts (AA) degree or the Associate of Science (AS) degree will also satisfy all requirements for the Transfer Module.)*

A. ENGLISH COMPOSITION (6 credit hours).
Complete two courses.

*ENGL 1110 English Composition I (A) (3) ***OR*** **ENGL 1111 English Composition I (B)
ENGL 1120 English Composition II (3) ***OR*** ENGL 1121 English Composition II - Technical Focus (3)

**English course selection is based on placement test results.*
***ENGL 1111 is 4 credits, only 3 credits apply to the Transfer Module.*

B. MATHEMATICS (Minimum of 3 credit hours).
Complete one course.

MATH 1330	Statistics for the Health Sciences (3)
MATH 1550	Statistics (4)
MATH 1600	Survey of College Algebra (3)
MATH 1650	College Algebra (4)
MATH 1700	Trigonometry (3)
MATH 1890	Finite Mathematics (4)
MATH 2400	Calculus for Business, Social and Life Sciences (5)
MATH 2500	Calculus and Analytical Geometry I (5)
MATH 2600	Calculus and Analytical Geometry II (5)
MATH 2700	Calculus and Analytical Geometry III (4)
MATH 2800	Linear Algebra (4)
MATH 2850	Differential Equations (4)
PHIL 2600	Logic (3)

C. ARTS AND HUMANITIES (Minimum of 6 credit hours).
Complete 6 credit hours from at least two of the following discipline areas [Arts, Communications & Performing Arts, English, Humanities, Music, and Philosophy].

Arts

ARTS 1120	Art Appreciation (3)
ARTS 2220	Survey of Art I (3)
ARTS 2230	Survey of Art II (3)
PHOT 1000	History of Photography (3)

English

ENGL 2210	Introduction to Fiction (3)
ENGL 2220	Introduction to Poetry (3)
ENGL 2225	Graphic Fiction and Narrative (3)
ENGL 2230	Introduction to Drama (3)
ENGL 2235	Contemporary Global Fiction (3)
ENGL 2240	Children's Literature (3)
ENGL 2245	Science Fiction (3)
ENGL 2248	Literature by Women (3)
ENGL 2250	Survey of American Literature I (3)
ENGL 2260	Survey of American Literature II (3)
ENGL 2263	American Cinema (3)
ENGL 2270	Literature of Contemporary Global Conflict (3)
ENGL 2275	Multicultural Literary Studies (3)
ENGL 2276	African American Literature (3)
ENGL 2280	Survey of British Literature I (3)
ENGL 2290	Survey of British Literature II (3)
ENGL 2296	Fantasy (3)

Humanities

HUMX 1100	Introduction to Humanities (3)
HUMX 1200	The American Experience in the Arts (3)
HUMX 1300	Human Issues: Choices in a Contemporary Society (3)

Music

MUSC 1200	Music Appreciation (3)
MUSC 1215	World Music (3)
MUSC 1800	Popular Music Rock, Jazz, Country, Folk, Soul (3)
MUSC 2200	Music History and Literature I (3)
MUSC 2250	Music History and Literature II (3)

Philosophy

PHIL 1300	Thinking Critically (3)
PHIL 1500	Introduction to Philosophy (3)
PHIL 2000	Comparative Religion (3)
PHIL 2600	Logic (3)
PHIL 2700	Ethics (3)

INTERDISCIPLINARY STUDIES

IDST 2400	Culture and Civilization of the Spanish Speaking World (3)

D. SOCIAL & BEHAVIORAL SCIENCES Complete a minimum of 6 credit hours with at least one course in the MACRO-SOCIAL SCIENCES [economics, geography, history, political science, and social science], and at least one course in the BEHAVIORAL SCIENCES [psychology, sociology, and social science].

MACRO-SOCIAL SCIENCES

Economics

ECON 1150	Basic Economics (3)
ECON 2500	Principles of Macroeconomics (3)
ECON 2600	Principles of Microeconomics (3)

Geography

GEOG 1500	Introduction to Geography (3)
GEOG 1600	World Regional Geography (3)
GEOG 1800	Geography of U.S. and Canada (3)
GEOG 2000	Economic Geography (3)
GEOG 2500	World Cultural Geography (3)

History

HIST 1150	Western Civilization I: Antiquity Through the Reformation (3)
HIST 1250	Western Civilization II: Age of Revolution Through the Present (3)
HIST 1450	World Civilization I: The Ancient and Medieval World (3)
HIST 1550	World Civilization II: The Modern World (3)
HIST 2150	U.S. History: Colonization Through Reconstruction (3)
HIST 2250	U.S. History: Reconstruction to the Present (3)
HIST 2450	Women in U.S. History (2)
HIST 2600	Ohio History (3)
HIST 2700	Vietnam Era and Its Legacy (3)

Political Science

POLS 1300	U.S. National Government (3)
POLS 2100	State and Local Government (3)
POLS 2200	Introduction to International Relations (3)
POLS 2300	Introduction to Comparative Politics (3)
POLS 2400	Women and Politics (3)
POLS 2500	Modern Political Ideologies (3)

Urban Studies

URST 2000	Introduction to Urban Studies (3)

BEHAVIORAL SCIENCES

Psychology

PSYC 1400	Human Sexuality (3)
PSYC 1500	Introduction to Psychology (3)
PSYC 1600	Psychology of Women (3)
PSYC 1700	Psychology of Gender (3)
PSYC 2200	Educational Psychology (3)
PSYC 2300	Personality Theory (3)
PSYC 2400	Child Psychology (3)
PSYC 2500	Adolescent Psychology (3)
PSYC 2600	Adult Development and Aging (3)
PSYC 2700	Introduction to Psychopathology (3)
PSYC 2750	Psychopathology of Childhood (3)
PSYC 2800	Social Psychology (3)

Sociology

SOCY 1150	Principles of Sociology (3)
SOCY 1190	Chemical Dependency and Society (3)
SOCY 2000	Ethnic Minorities in the U.S. (3)
SOCY 2250	Introduction to Social Work (3)
SOCY 2260	Sociology of the Family (3)
SOCY 2270	Sociology of Aging (3)
SOCY 2280	Social Problems (3)

INTERDISCIPLINARY STUDIES

IDST 1200	Introduction to Women's Studies (3)

E. NATURAL SCIENCES (Minimum of 6 credit hours)
Complete 6 credit hours from natural sciences with at least one course a laboratory course.

Biology

*BIOL 1010	Introductory Biology I: Cells, Genetics and Evolution (3)
*BIOL 1020	Introductory Biology II: Organismic Biology and Ecology (3)
*BIOL 1140	Human Biology (3)
BIOL 1150	Plant Biology (4)
BIOL 1160	Animal Biology (4)
BIOL 1170	Ecology and Environmental Biology (4)
BIOL 1190	Introduction to Evolutionary Biology (4)
BIOL 1200	Fundamentals of Biology for the Health Technologies (4)
BIOL 1510	Principles of Biology I (4)
BIOL 1520	Principles of Biology II (4)
BIOL 2210	Anatomy and Physiology I (4)
BIOL 2220	Anatomy and Physiology II (4)
BIOL 2700	Microbiology (4)

Chemistry

CHEM 1050	Chemistry in the Everyday World (3)
CHEM 1100	Elementary Chemistry (4)
CHEM 1150	Introduction to Organic Chemistry (4)
CHEM 1500	General Chemistry I (5)
CHEM 1600	General Chemistry II (5)
CHEM 2000	Quantitative Analysis (5)
CHEM 2500	Organic Chemistry I (5)
CHEM 2600	Organic Chemistry II (5)

Geography

GEOG 1550	Physical and Environmental Geography (3)

Geology

GEOL 1100	Introduction to Physical Geology (4)
GEOL 1200	Introduction to Historical Geology (4)
GEOL 1300	Introduction to Stream System Analyses (3)

Physical Science

PSCI 1100	Conceptual Physical Science (4)
PSCI 1300	Earth Science (3)
PSCI 1400	Introduction to Meteorology (3)

Physics

*PHYS 1500	Astronomy (4)
*PHYS 1550	Everyday Physics (3)
PHYS 1610	General Physics I (5)
PHYS 1620	General Physics II (5)
PHYS 2410	Science and Engineering Physics I (5)
PHYS 2420	Science and Engineering Physics II (5)

*Non-laboratory course

F. ORAL COMMUNICATIONS

COMM 1000	Effective Public Speaking (3)

Additional Requirement (9-13 credit hours). These hours must be selected from the approved Transfer Module list.

THE COMPLETION OF THE TRANSFER MODULE REQUIRES 36-40 SEMESTER CREDIT HOURS.

Associate of Arts Degree Planning Guide

The planning guide below is provided to assist students in planning a program of study. Students are encouraged to consult with a college counselor about their education goals to assure that their programs of study not only satisfy Lakeland's requirements but also the transfer requirements of the baccalaureate programs to which they aspire. Students should also refer to pages 42 and 43 to determine which courses will fulfill the Associate of Arts degree requirements at Lakeland.

First Semester:

- ❑ COMM 1000 Effective Public Speaking 3
- ❑ ***ENGL 1110**** ***English Composition I (A)*** 3
  - ***OR***
  - ***ENGL 1111*** ***English Composition I (B)***
- ❑ FYEX 1000 First Year Experience 1
- ❑ Choose course from the Arts and Humanities Electives list on page 42. 3
- ❑ Choose course from the Social and Behavioral Sciences Electives list on page 42. 3
- ❑ Choose course from the Electives list on page 43. 3

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Second Semester:

- ❑ ***ENGL 1120*** ***English Composition II*** 3
  - ***OR***
  - ***ENGL 1121*** ***English Composition II - Technical Focus***
- ❑ Choose course from the Arts and Humanities Electives list on page 42. 3
- ❑ Choose course from the Social and Behavioral Sciences Electives list on page 42. 3
- ❑ Choose course from the Mathematics Electives list on page 43 3
- ❑ Choose course from the Electives list on page 43 3

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Third Semester:

- ❑ Choose course from the Arts and Humanities Electives list or the Social and Behavioral Sciences Electives list on page 42. 3
- ❑ Choose course from the Natural Sciences Electives list on page 43. 3
- ❑ Choose courses from the Electives list on page 43. 9

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Fourth Semester:

- ❑ Choose course from the Arts and Humanities Electives list or the Social and Behavioral Sciences Electives list on page 42. 3
- ❑ Choose course from the Natural Sciences Electives list on page 43 3
- ❑ Choose courses from the Electives list on page 43. 9

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Program Total: 61

Associate of Science Degree Planning Guide

The planning guide below is provided to assist students in planning a program of study. Students are encouraged to consult with a college counselor about their education goals to assure that their programs of study not only satisfy Lakeland's requirements but also the transfer requirements of the baccalaureate programs to which they aspire. Students should also refer to pages 44 and 45 to determine which courses will fulfill the Associate of Science degree requirements at Lakeland.

First Semester:

- ❑ ***ENGL 1110**** ***English Composition I (A)*** 3
  OR
  ENGL 1111 ***English Composition I (B)***
- ❑ FYEX 1000 First Year Experience 1
- ❑ Choose course from the Mathematics list on page 45 3-5
- ❑ Choose required Mathematics or Natural Sciences course from the list on page 45. 3-5
- ❑ Choose Elective from the Mathematics/Natural Sciences list on page 45. 4-5

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17-20

Second Semester:

- ❑ ***ENGL 1120*** ***English Composition II*** 3
  OR
  ENGL 1121 ***English Composition II - Technical Focus***
- ❑ Choose course from the Natural Sciences required sequence list on page 45. 4-5
- ❑ Choose required Mathematics Elective or Natural Sciences course from list on page 45. 4-5
- ❑ Choose Elective from the Mathematics/Natural Sciences list on page 45. 4-5

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15-18

Third Semester:

- ❑ Choose course from the Arts and Humanities Electives list on page 44. 3
- ❑ Choose required course from the Natural Sciences course list on page 45. 4-5
- ❑ Choose Electives from the Mathematics/Natural Sciences list on page 45. 8-10

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15-18

Fourth Semester:

- ❑ Choose course from the Arts and Humanities Electives list on page 44. 3
- ❑ Choose course from the Social and Behavioral Sciences Electives list on page 45. 3
- ❑ Choose Electives from the Mathematics/Natural Sciences list on page 45 8-10

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Program Total: 61

International Studies Certificate (5101)

The International Studies Certificate provides students with a broad introduction to the historical, political, geographical, economic, religious, and literary bases of the modern world. In addition, students will complete six hours of intermediate language studies. Courses that fulfill the requirements of the certificate transfer to other colleges as general education credits. Certain courses will also transfer to Cleveland State University for the International Relations major in addition to general education credit. A sheet listing pertinent courses can be obtained from the Center for International Education or the Counseling Center at Lakeland Community College.

Required:

Choose courses from the Modern Language list. 6
Choose courses from the Core Courses list. 15
Choose courses from the Electives list. 6

Certificate Total: 27

Modern Language: minimum 6 credits at the Intermediate level

FREN 2001 . . . . . Intermediate French I: Conversation and Grammar 3
FREN 2002 . . . . . Intermediate French II: Culture and Civilization 3
GERM 2001 . . . . . Intermediate German I: Conversation and Grammar 3
GERM 2002 . . . . . Intermediate German II: Culture and Civilization 3
ITAL 2001 . . . . . Intermediate Italian I: Conversation and Grammar 3
ITAL 2002 . . . . . Intermediate Italian II: Culture and Civilization 3
SPAN 2001 . . . . . Intermediate Spanish I: Conversation and Grammar 3
SPAN 2002* . . . . . Intermediate Spanish II: Culture and Civilization 3
SPAN 2003 . . . . . Spanish Composition and Grammar
Other languages considered by the International Education Committee on a case-by-case basis

Core Courses: minimum 15 credits

ECON 2500 . . . . . Principles of Macroeconomics 3
ENGL 2270 . . . . . Literature of Contemporary Global Conflict 3
ENGL 2275 . . . . . Multicultural Literacy Studies 3
GEOG 1600 . . . . . World Regional Geography 3
GEOG 2500 . . . . . World Cultural Geography 3
HIST 1150 . . . . . Western Civilization I: Antiquity through the Reformation 3
HIST 1250 . . . . . Western Civilization II: Age of Revolution through the Present 3
HIST 1450 . . . . . Civilization I: The Ancient and Medieval World 3
HIST 1550 . . . . . Civilization II: The Modern World 3
IDST 2400* . . . . . Culture and Civilization of the Spanish Speaking World 3
MUSC 1215 . . . . . World Music 3
PHIL 2000 . . . . . Comparative Religion 3
POLS 2200 . . . . . Introduction to International Relations 3
POLS 2300 . . . . . Introduction to Comparative Politics 3
POLS 2500 . . . . . Modern Political Ideologies 3

Electives: minimum 6 credits

ANTH 1160 . . . . . Introduction to Cultural Anthropology 3
ARTS 2220 . . . . . Survey of Art I 3
ARTS 2230 . . . . . Survey of Art II 3
BUSM 1500** . . . . . International Business in a Global Environment 3
BUSM 2560** . . . . . International Marketing 3
COMM 1100 . . . . . Effective Interpersonal Communication 3
ECON 2700 . . . . . International Economics 3
ENGL 2280 . . . . . Survey of British Literature I 3
ENGL 2290 . . . . . Survey of British Literature II 3
HUMX 1100 . . . . . Introduction to Humanities 3
LING 1500 . . . . . Introduction to Linguistics 3

**Because of similarities in course content, students should not take both IDST 2400 and SPAN 2002.*

***BUSM 1500 and BUSM 2560 require prerequisites and/or permission of the instructor. The prerequisite for BUSM 1500 is BUSM 1300. Both BUSM 1300 and BUSM 1500 are required for BUSM 2560.*

Chemical Technician Certificate (3701)

This certificate program prepares students for employment as chemical technicians. Working under the supervision of chemists and chemical engineers, chemical technicians use the principles and theories of chemistry to solve problems in research and development by operating and maintaining laboratory instruments, monitoring experiments, making observations, and calculating and recording results. They work with sophisticated laboratory equipment in performing testing and analyses on chemical samples, and synthesizing and improving products. In addition to performing routine tasks, chemical technicians may also develop and adapt new laboratory procedures to achieve the best results, interpret data, and devise solutions to problems.

A minimum GPA of 2.0 and a "C" grade or higher is required in all science and program-specific courses for graduation.

NOTE: *CHEM 1500 has prerequisites that include high school chemistry or CHEM 1100 General Chemistry. Students may need to take additional courses if they do not already meet these prerequisite requirements.*

CHEM 1500	General Chemistry I	5
CHEM 1600	General Chemistry II	5
CHEM 2000	Quantitative Analysis	5
CHEM 2500	Organic Chemistry I	5
CHEM 2600	Organic Chemistry II	5
MATH 1650	College Algebra	4
MATH 1700	Trigonometry	3

Certificate Total: 32

Graphic Design (9250)

A graphic designer is a visual problem solver. In order to solve these problems, a designer must be skilled in the use of typography, design, color, layout, packaging, photography, production, computer software, marketing, advertising, and presentation.

Graduates of this program will have the skills to enter the graphic design field at entry-level or to transfer to institutions offering a baccalaureate degree. Regardless of their immediate goal, students will be encouraged to develop all conceptual and technical abilities most applicable to the field.

There are many career opportunities available to graphic designers right out of school. The potential for growth in the field increases with experience as graphic designers can work to become art directors, creative directors, or even account managers working on the client side of the field. Various working environments include design studios, advertising agencies, corporate in-house design departments, publishing houses, print shops, and multi-media companies.

A certificate is also available.

First Semester:

ARTS 1130	Art Drawing I	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
GRDS 1010	Visual Organization	3
GRDS 1015	Introduction to Typography	3
GRDS 1375	Computer Graphics AI, ID and PS	3
		16

Second Semester:

ENGL 1120	English Composition II	3
GRDS 1020	Graphic Design	3
GRDS 1500	History of Graphic Design	3
GRDS 2110	Graphic Production	3
PHOT 1105	Basic Photography - Digital	3
		15

Third Semester:

COMM 1000	Effective Public Speaking	3
GRDS 2015	Advanced Typography	3
GRDS 2230	Advertising Design	3
MATH 1600**	Survey of College Mathematics	3
Choose course(s) from the Arts and Humanities Electives list.		3
		15

Fourth Semester:

GRDS 2500	Graphic Design Portfolio	3
ITCS 1105	Web Programming I	3
PHOT 1400	Commercial Photography	3
Choose any Natural Science Transfer Module course(s).		3
Choose courses(s) from the Social and Behavioral Sciences Electives list.		3
		15
	Program Total:	**61**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Graphic Design for the Web Certificate (2513)

This certificate is designed to meet the growing demand for graphic designers and web content developers who are proficient in skill sets such as basic web programming, the Adobe Creative Suite, and other tools and principles of graphic and web design. The Graphic Design for the Web Certificate will allow Graphic Design majors to begin to acquire knowledge for front-end web development, and allow IT&CS Web Content Developers the opportunity to acquire knowledge in basic graphic design.

First Semester:

GRDS 1015	Introduction to Typography	3
GRDS 1375	Computer Graphics AI, ID, and PS	3
MDIA 1500	Interactive Media I: Introduction to Interactive Design	3
		9

Second Semester:

ITCS 1105	Web Programming I	3
ITIS 1108	Using an HTML Editor	2
ITIS 1130	Introduction to Web Design	1
GRDS 2400	Automating Adobe Creative Suite Products with JavaScript	3
		9

Certificate Total: 18

Photography Certificate (2514)

Photography is a technology driven field. This certificate is designed to provide students with training in the use of photographic equipment, software, and best practices, which is vital in producing images of a professional caliber. In addition, training in visual literacy and the aesthetics of photography are key to success in this field. With a tendency in our economy towards sole proprietorships and small business development, the ability to earn such a certificate would enable both traditional and non-traditional students to garner the skills necessary to become their own entrepreneurs as photographers, and to expand their rolls in existing employment positions.

First Semester:

GRDS 1375	Computer Graphics AI, ID, and PS	3
PHOT 1105	Basic Photography - Digital	3
PHOT 2300	Introduction to Digital Photo Imaging	3
		9

Second Semester:

BUSM 1620	Introduction to Entrepreneurship	3
GRDS 2110	Graphic Production	3
GRDS 2400	Automating Adobe Creative Suite Products with JavaScript	3
PHOT 1400	Commercial Photography	3
		12

Third Semester:

PHOT 1500	Portrait Photography	3
PHOT 1700	Color Photography	3
PHOT 2350	Advanced Digital Photo Imaging	3
		9

Certificate Total: 30

Associate of Applied Business Degree

Applied Studies - Computer, Design and Engineering Technologies

Information Technology and Computer Science

The Information and Computer Science department at Lakeland provides instruction in the current high demand Information Technology (IT) skill sets including, programming languages, systems development and support, web content development, database development and administration, hardware and software usage and support, and networking administration. There are six areas of concentration available within the degree program as well as seven certificate programs that prepare students for entry into the IT field which, according to the U.S. Bureau of Labor Statistics, will see significant increase in employment through 2022.

Computer Science/Programming:
- Application Programming and Development Concentration
- Computer Science/Software Engineering Concentration

Database:
- Database Administrator Concentration

Information Systems:
- User Support Specialist Major
- Web Content Developer Concentration

Operating Systems/Networking:
- Operating Systems/Networking Concentration

Computer Information Technology:
- See Associate of Technical Studies in Computer Information Technology (9720) on pages 175-176

Certificates:
- Computer User Certificate
- Graphic Design for the Web Certificate
- IT Foundations Certificate
- IT Specialist Certificate
- IT Professional Certificate
- Red Hat Certified Engineer (RHCE) Preparation
- Red Hat Certified System Administrator (RHCSA) Preparation

Application Programming and Development Concentration (9246)

This program prepares students for entry-level software development positions in the high demand field of mobile application development. Students will learn how to develop software and design mobile applications for Apple's iPhone/iPad and Android phone and tablets. The primary languages covered include Objective C, Swift, and Java. Students will use both Apple's Xcode and Android Studio integrated development environments to design, develop, and simulate mobile applications. In addition to employment opportunities, students have the option to continue their education beyond the two-year associate degree program by enrolling in four-year programs at local universities.

NOTE: *Students must fulfill the following requirements for this program:*

Successfully complete the CIS Tech Prep program ***OR*** *have waived with equivalent high school* ***OR*** *college coursework the following course:*

ITIS 1005 Computers and Information Processing ***OR*** *complete ITIS 1005 with a grade of "C" or better*

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BUSM 1300	Introduction to Business	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITCS 1010	Programming Logic	3
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
MATH 1600**	Survey of College Mathematics	3
		14

Second Semester:

BUSM 2400	Business Communication	3
ITCS 1820	Java Programming I	3
ITCS 1825	Programming I for iOS	3
ITDB 1400	Introduction to SQL	3
PEHR 1650	Health Fitness	2
Choose courses(s) from the Social and Behavioral Sciences Electives list.		3
		16

Third Semester:

BUSM 2200	Organizational Behavior	3
ITCS 2820	Java/Android Programming II	3
ITCS 2825	Programming II for iOS	3
ITIS 1008	Ethics in Information Technology	1
ITON 1205	Network+ and Networking Essentials	2
Choose course(s) from the Arts and Humanities Electives list.		3
		15

Fourth Semester:

BUSM 1700	Principles of E-Business	3
ITCS 2821	Java/Android Programming III	2
ITCS 2826	Programming III for iOS	2
ITIS 2890	Information Technology and Computer Science Capstone	2
Choose course(s) from the Natural Sciences Electives list.		3
Choose course(s) from the Technical Electives list.		3
		15
		Program Total: 60

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Technical Electives: minimum 3 credits
Any Information Technology (ITCS, ITDB, ITIS, ITON) course(s) except ITIS 1000

Natural Sciences Electives: minimum 3 credits

CHEM 1050	Chemistry in the Everyday World	3
PSCI 1300	Earth Science	3
PSCI 1400	Introduction to Meteorology	3

Any other Natural Sciences laboratory course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits
ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Computer Science/Software Engineering Concentration (9259)

This concentration is designed for students planning to transfer to a Computer Science or Computer Information Systems program at a four-year college. In addition to being a transfer program, this program will help students who are interested in game and entertainment programming acquire the fundamental skills to get started. Students should consult a Lakeland counselor prior to beginning this program in order to ensure maximum transferability.

NOTE: *Students must fulfill the following requirements for this program:*

1. *place into MATH 1700 Trigonometry OR complete MATH 1650 College Algebra with a grade of "C" or better.*
2. *successfully complete the CIS Tech Prep program **OR** have waived with equivalent high school or college coursework the following course:*

*ITIS 1005 Computers and Information Processing **OR** complete ITIS 1005 with a grade of "C" or better*

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BUSM 1300	Introduction to Business	3
CPET 1120	C Programming for Engineering Technology	3
FYEX 1000	First Year Experience	1
ITCS 1010	Programming Logic	3
ITON 1011	Comparative Analysis of Microcomputer Operating Systems	2
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
MATH 1700	Trigonometry	3
		16

Second Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ITCS 1820	Java Programming I	3
ITCS 1870	Python Programming I	3
ITDB 1400	Introduction to SQL	2
MATH 2500	Calculus and Analytical Geometry I	5
		16

Third Semester:

BUSM 2400	Business Communication	3
ITCS 2080	Fundamentals of Software Engineering	3
ITCS 2870	Data Structures	4
ITON 1205	Network+ and Networking Essentials	2
MATH 2600	Calculus and Analytical Geometry II	5
		17

Fourth Semester:

CHEM 1500**	General Chemistry I	5
OR		
PHYS 2410	Science and Engineering Physics I	
ITCS 2012	Discrete Structures	3
ITCS 2875	Computer Architecture and Organization	3
ITIS 2890	Information Technology and Computer Science Capstone	2
Choose course(s) from the Arts and Humanities Electives list.		3
		16
	Program Total:	**65**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

**Students should discuss the choice of science courses with their advisor.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Database

Database Administrator Concentration (9258)

This program prepares students for entry-level employment in the field of database administration. Students will obtain skills that are necessary for the configuration, implementation, administration, and maintenance of Enterprise level databases. Database administrators are responsible for the storage, organization, integrity, and management of data, as well as for the security and backup/recovery of the database. Courses within this program help students prepare for various vendor certification exams, including Microsoft, Oracle, Red Hat, and CompTIA. In addition to employment opportunities, students have the option to continue their education beyond the two-year associate degree program by enrolling in four-year programs at local universities.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BUSM 1300	Introduction to Business	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
(1st 8 weeks)		
ITIS 1005	Computers and Information Processing	3
(2nd 8 weeks)		
ITCS 1010	Programming Logic	3
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
ITON 1205	Network+ and Networking Essentials	2
		16

Second Semester:

BUSM 2400	Business Communication	3
ITON 1747	Red Hat Academy System Administration I	3
MATH 1600**	Survey of College Mathematics	3
(1st 8 weeks)		
ITDB 1400	Introduction to SQL	2
(2nd 8 weeks)		
ITDB 1405	Oracle PL/SQL Programming	2
ITON 2050	Windows 7 Configuration	2
OR		
ITON 2060	Configuring Windows 8	
		15

Third Semester:

ITCS 1820	Java Programming I	3
ITDB 1406	Microsoft SQL Concepts	2
ITDB 2417	Oracle Database Administration	3
ITON 2240	Installing and Configuring Windows Server 2012	2
PEHR 1650	Health Fitness	2
Choose course(s) from the Arts and Humanities Electives list.		3
		15

Fourth Semester:

ITDB 2427	Microsoft SQL Server Administration	3
ITIS 2890	Information Technology and Computer Science Capstone	2
MATH 2130	Business Statistics I	3
Choose course(s) from the Natural Sciences Electives list.		3
Choose courses(s) from the Social and Behavioral Sciences Electives list.		3
Choose course(s) from the Technical Electives list.		3
		17
	Program Total:	**63**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Technical Electives: minimum 3 credits

CPET 1050	Assembling, Upgrading and Repairing Personal Computers	2
ITCS 1105	Web Programming I	3
ITCS 1810	Visual Basic.NET Programming I	3
ITCS 2010	Systems Analysis	3
ITCS 2170	Introduction to ASP.NET	2
ITCS 2820	Java/Android Programming II	3
ITIS 1100	Internet: Services, Tools, and Web Page Creation	2
ITIS 1115	Internet Technologies and Concepts	2
ITIS 2015	Information Technology Project Management	3
ITON 1757	Red Hat Academy System Administration II	3
ITON 2241	Administering Windows Server 2012	2
ITON 2242	Configuring Advanced Windows Server 2012	2
Any Information Technology (ITCS, ITDB, ITIS, ITON) course(s) except ITIS 1000		

Natural Sciences Electives: minimum 3 credits

CHEM 1050.....Chemistry in the Everyday World 3
PSCI 1300 .....Earth Science 3
PSCI 1400 .....Introduction to Meteorology 3
Any other Natural Sciences laboratory course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Information Systems

User Support Specialist Major (9243)

This program provides students with expertise in supporting business computer applications and operating systems. It includes a study of hardware and software installation, the use and support of common operating systems, and networking. Students can also select from electives in programming, systems design, and systems security. Graduates are prepared to tailor hardware and software based on user needs and to provide end-user support and training. Career opportunities include help desk support, technical computer training, computer consulting, and information technologies employment. The typical education required to become a help desk support technician is an associate degree; however, students have the option to continue their education by enrolling in four-year programs at local universities.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ENGL 1110* .....English Composition I (A).....3
OR
ENGL 1111 .....English Composition I (B)
FYEX 1000.....First Year Experience 1
ITIS 1100 .....Internet: Services, Tools, and Web Page Creation 2
PEHR 1650 .....Health Fitness.....2
(1st 8 weeks)
ITIS 1005 .....Computers and Information Processing 3
(2nd 8 weeks)
ITIS 1008 .....Ethics in Information Technology 1
ITON 1050.....Using Microsoft Windows 7.....1
OR
ITON 1060 .....Using Microsoft Windows 8
ITON 1205.....Network+ and Networking Essentials 2

15

Second Semester:

BUSM 1300.....Introduction to Business.....3
ITCS 1010 .....Programming Logic 3
ITIS 1025 .....Managing and Optimizing Personal Computers 2
ITIS 1510 .....Microsoft Office Word: Skills and Techniques.....3
ITIS 1520 .....Microsoft Office Excel: Skills and Techniques 3
MATH 1600**.....Survey of College Mathematics 3

17

Third Semester:

BUSM 2200.....Organizational Behavior.....3
BUSM 2400.....Business Communication.....3
ITIS 2015 .....Information Technology Project Management.....3
ITIS 2510 .....Help Desk Concepts and Management.....3
ITON 2050.....Windows 7 Configuration.....2
OR
ITON 2060.....Configuring Windows 8
Choose course(s) from the Arts and Humanities Electives list. 3

17

Fourth Semester:

ITDB 1400	Introduction to SQL	2
ITIS 2890	Information Technology and Computer Science Capstone	2
ITON 2051	Windows 7 Enterprise Support Technician	2
OR		
ITON 2061	Managing and Maintaining Windows 8	
Choose course(s) from the Natural Sciences Electives list.		3
Choose courses(s) from the Social and Behavioral Sciences Electives list.		3
Choose course(s) from the Technical Electives list.		3
		15
	Program Total:	**64**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Technical Electives: minimum 3 credits

ITCS 1105	Web Programming I	3
ITCS 1810	Visual Basic.NET Programming I	3
ITCS 1820	Java Programming I	3
ITCS 1825	Programming I for iOS	3
ITCS 1870	Python Programming I	3
ITCS 2010	Systems Analysis	3
ITIS 1030	Security Awareness	1
ITIS 1115	Internet Technologies and Concepts	2
ITIS 1130	Introduction to Web Design	1
ITIS 1355	Security+ and Security Essentials	3
ITIS 1530	Microsoft Office Access: Skills and Techniques	3
ITIS 1540	Microsoft Office PowerPoint: Skills and Techniques	2
ITON 1040	Using Virtualization	1
ITON 1610	Wireless Communications and Networking	2
ITON 1620	Voice Communications and Networking	2
ITON 1747	Red Hat Academy System Administration I	3
ITON 2240	Installing and Configuring Windows Server 2012	2

Natural Sciences Electives: minimum 3 credits

CHEM 1050	Chemistry in the Everyday World	3
PSCI 1300	Earth Science	3
PSCI 1400	Introduction to Meteorology	3

Any other Natural Sciences laboratory course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Web Content Developer Concentration (9251)

This program provides students with skills necessary to understand, use, and develop Internet services and resources. In addition, the program will help students become web developers who are responsible for the look and technical aspects of a web site. Students will create content-rich sites that use various forms of media as well as basic interactive programming techniques. Projects will emphasize business, home-office, and personal applications. According to the U.S. Bureau of Labor Statistics, the employment of web developers is projected to grow through 2022, faster than the average for all occupations. The typical education needed to become a web developer is an associate degree; however, students have the option to continue their education by enrolling in four-year programs at local universities.

NOTE: *Students who are interested in additional skills should also consider: ITCS 2105, ITCS 2170, ITDB 1405, and ITON 1747. Students may need to complete additional prerequisite courses.*

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BUSM 1300	Introduction to Business	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1100	Internet: Services, Tools and Web Page Creation	2
(1st 8 weeks)		
ITIS 1005	Computers and Information Processing	3
(2nd 8 weeks)		
ITCS 1010	Programming Logic	3
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
		16

Second Semester:

BUSM 2400	Business Communications	3
ECON 2600	Principles of Microeconomics	3
ITCS 1105	Web Programming I	3
ITCS 1820	Java Programming I	3
ITDB 1400	Introduction to SQL	2
ITIS 1130	Introduction to Web Design	1
		15

Third Semester:

BUSM 2500	Principles of Marketing	3
ITCS 2120	JavaScript Programming I	3
ITIS 1008	Ethics in Information Technology	1
ITIS 1108	Using an HTML Editor	2
PHOT 2300	Introduction to Digital Photo Imaging	3
Choose course(s) from the Natural Sciences Electives list.		3
		15

Fourth Semester:

BUSM 2550**	Direct and Internet Marketing	3
ITIS 2890	Information Technology and Computer Science Capstone	2
MATH 1600***	Survey of College Mathematics	3
Choose course(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Technical Electives list.		4
		15
	Program Total:	**61**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute BUSM 2520, BUSM 2530, or BUSM 2560 for BUSM 2550.*

****Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Technical Electives: minimum 4 credits

GRDS 1010	Visual Organization	3
GRDS 1015	Introduction to Typography	3
GRDS 1020	Graphic Design	3
ITCS 2105	Web Programming II	3
ITCS 2170	Introduction to ASP.NET	2
ITCS 2820	Java/Android Programming II	3
ITDB 1405	Oracle PL/SQL Programming	2
ITIS 1030	Security Awareness	1
ITIS 1115	Internet Technologies and Concepts	2
ITIS 1530	Microsoft Office Access: Skills and Techniques	3
ITON 1205	Network+ and Networking Essentials	2
PHOT 1105	Basic Photography - Digital	3
PHOT 2350	Advanced Digital Photo Imaging	3

Natural Sciences Electives: minimum 3 credits

CHEM 1050 ..... Chemistry in the Everyday World 3
PSCI 1300 ..... Earth Science 3
PSCI 1400 ..... Introduction to Meteorology 3
Any other Natural Sciences laboratory course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Computer User Certificate (2402)

This certificate is designed to prepare students for employment in a variety of positions requiring fundamental computer knowledge and skills.

ITIS 1000 ..... Introduction to Personal Computers 1
OR
ITIS 1005 ..... Computers and Information Processing 3
ITON 1050 ..... Using Microsoft Windows 7 1
OR
ITON 1060 ..... Using Microsoft Windows 8
Choose course(s) from the Microsoft Office Electives list. 2-3

Certificate Total: 4-7

Microsoft Office Electives: minimum 2-3 credits

ITIS 1510 ..... Microsoft Office Word: Skills and Techniques 3
ITIS 1520 ..... Microsoft Office Excel: Skills and Techniques 3
ITIS 1530 ..... Microsoft Office Access: Skills and Techniques 3
ITIS 1540 ..... Microsoft Office PowerPoint: Skills and Techniques 2
ITIS 1550 ..... Using Microsoft Office: Word and Excel 3

IT Foundations Certificate (2401)

This certificate is designed to prepare students for employment in a variety of positions requiring fundamental information technology knowledge and skills. It also fulfills one of the designated steps leading to completion for several IT degree concentrations.

ITCS 1010 ..... Programming Logic 3
ITIS 1005 ..... Computers and Information Processing 3
ITON 1050 ..... Using Microsoft Windows 7 1
OR
ITON 1060 ..... Using Microsoft Windows 8

Certificate Total: 7

IT Specialist Certificate (2403)

This certificate builds upon previous information technology foundational skills by providing core competencies as well as breadth and/or depth. It is designed to prepare students for employment in a variety of positions requiring more specialized computer knowledge and skills. It also fulfills one of the designated steps leading to completion for all of the IT degree concentrations.

Completion of the IT Foundations Certificate 7
OR
Completion of ITCS 1010 Programming Logic
AND
Completion of 4 additional credits in ITCS, ITDB, ITIS, ITON courses
Choose courses from the Information Technology Electives list. 8

Certificate Total: 15

Information Technology Electives: minimum 8 credits

At least one course must be selected from the following courses which help students prepare for industry certification:

ITDB 1400 ..... Introduction to SQL 2
ITDB 1405 ..... Oracle PL/SQL Programming 2
ITDB 1406 ..... Microsoft SQL Concepts 2
ITDB 2417 ..... Oracle Database Administration 3
ITDB 2427 ..... Microsoft SQL Server Administration 3
ITIS 1355 ..... Security+ and Security Essentials 3
ITIS 2015 ..... Information Technology Project Management 3
ITIS 2350 ..... Management of Information Security 3
ITIS 2355 ..... Security Investigation and Penetration Studies 3

ITON 1205 ..... Network+ and Networking Essentials 2
ITON 1725 ..... Introduction to the Linux/Unix Operating System 2
ITON 1747 ..... Red Hat Academy System Administration I 3
ITON 1757 ..... Red Hat Academy System Administration II 3
ITON 2767 ..... Red Hat Academy System Administration III 3
ITON 2050 ..... Windows 7 Configuration 2
ITON 2051 ..... Windows 7 Enterprise Support Technician 2
ITON 2060 ..... Configuring Windows 8 2
ITON 2061 ..... Managing and Maintaining Windows 8 2
ITON 2232 ..... Core Solutions of Microsoft Office SharePoint Server 2
ITON 2240 ..... Installing and Configuring Windows Server 2012 2
ITON 2241 ..... Administering Windows Server 2012 2
ITON 2242 ..... Configuring Advanced Windows Server 2012 Services 2

Remaining credits can be taken from within the above list or any other Information Technology (ITCS, ITDB, ITIS, ITON) courses.

IT Professional Certificate (2404)

This certificate builds upon previous information technology proficiency skills by providing professional competencies as well as an additional breadth and depth. It is designed to prepare students for employment in a variety of positions requiring a professional level of computer knowledge and skills. It also fulfills one of the designated steps leading to completion for all of the IT degree concentrations.

Completion of the IT Specialist Certificate 15
ENGL 1110* ..... English Composition I (A) 3
OR
ENGL 1111 ..... English Composition I (B)
Choose courses from the Business Management Electives list 3
Choose courses from the Information Technology Electives list 9
Certificate Total: 30

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Information Technology Electives: minimum 9 credits
Any Information Technology (ITCS, ITDB, ITIS, ITON) courses

Business Management Electives: minimum 3 credits
BUSM 1300 ..... Introduction to Business 3
BUSM 2200 ..... Organizational Behavior 3
BUSM 2400 ..... Business Communication 3

Graphic Design for the Web Certificate (2513)

This certificate is designed to meet the growing demand for graphic designers and web content developers who are proficient in skill sets such as basic web programming, the Adobe Creative Suite, and other tools and principles of graphic and web design. The Graphic Design for the Web Certificate will allow Graphic Design majors to begin to acquire knowledge for front-end web development, and allow IT&CS Web Content Developers the opportunity to acquire knowledge in basic graphic design.

First Semester:
GRDS 1015 ..... Introduction to Typography 3
GRDS 1375 ..... Computer Graphics AI, ID, and PS 3
MDIA 1500 ..... Interactive Media I: Introduction to Interactive Design 3
9

Second Semester:
ITCS 1105 ..... Web Programming I 3
ITIS 1108 ..... Using an HTML Editor 2
ITIS 1130 ..... Introduction to Web Design 1
GRDS 2400 ..... Automating Adobe Creative Suite Products with JavaScript 3
9
Certificate Total: 18

Operating Systems/Networking Concentration (9249)

The Operating Systems/Networking Concentration provides coverage of all aspects of installing, administering and managing heterogeneous local and wide area networks. Based on Lakeland's status as a Microsoft IT Academy (MSITA) and Red Hat Academy (RHA), instruction included in the emphasis helps prepare students and professionals for multiple vendor and vendor neutral certifications such as CompTIA Networking+, CompTIA Security+, Microsoft Certified Solution Associate (MCSA), Red Hat Certified System Administrator (RHCSA), and Red Hat Certified Engineer (RHCE). In addition to employment opportunities, students have the option to continue their education beyond the two-year associate degree program by enrolling in four-year programs at local universities.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BUSM 1300	Introduction to Business	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MATH 1600**	Survey of College Mathematics	3
(1st 8 weeks)		
ITIS 1005	Computers and Information Processing	3
(2nd 8 weeks)		
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
ITON 1205	Network+ and Networking Essentials	2
		16

Second Semester:

BUSM 2200	Organizational Behavior	3
BUSM 2400	Business Communication	3
ITCS 1010	Programming Logic	3
ITON 1747	Red Hat Academy System Administration I	3
(1st 8 weeks)		
ITON 2050	Windows 7 Configuration	2
OR		
ITON 2060	Configuring Windows 8	
(2nd 8 weeks)		
ITON 2240	Installing and Configuring Windows Server 2012	2
		16

Third Semester:

ITIS 1025	Managing and Optimizing Personal Computers	2
ITIS 1355	Security+ and Security Essentials	3
ITON 1757	Red Hat Academy System Administration II	3
ITON 2750	Shell Script Programming	2
PEHR 1650	Health Fitness	2
(1st 8 weeks)		
ITON 2241	Administering Windows Server 2012	2
(2nd 8 weeks)		
ITON 2242	Configuring Advanced Windows Server 2012 Services	2
		16

Fourth Semester:

ITIS 2890	Information Technology and Computer Science Capstone	2
ITON 2767	Red Hat Academy System Administration III	3
Choose course(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Natural Sciences Electives list.		3
Choose courses(s) from the Social and Behavioral Sciences Electives list.		3
Choose course(s) from the Technical Electives list.		2
		16

Program Total: 64

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Technical Electives: minimum 2 credits

ITON 2051 ..... Windows 7 Enterprise Support Technician 2
OR
ITON 2061 ..... Managing and Maintaining Windows 8

Natural Sciences Electives: minimum 3 credits

CHEM 1050 ..... Chemistry in the Everyday World 3
PSCI 1300 ..... Earth Science 3
PSCI 1400 ..... Introduction to Meteorology 3
Any other Natural Sciences laboratory course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Red Hat Certified System Administrator (RHCSA) Certificate (2497)

This certificate is intended for those individuals who already possess a college degree or who wish to learn this technical material without working toward a degree. This certificate helps to prepare the student for the first certification, the Red Hat Certified System Administrator (RHCSA). The exam is a performance-based test that is the first step in establishing Linux credentials. The focus on this set of courses is the administration of a single Linux system.

NOTE: Coursework in this certificate includes a prerequisite that is not included in the certificate. Students with equivalent knowledge and experience may request to have the prerequisite waived. Students who do not have the prerequisite and do not have equivalent knowledge and experience will need to take an additional course.

ITON 1747 has a prerequisite of ITIS 1005 Computers and Information Processing or permission of instructor.

ITON 1747 ..... Red Hat Academy System Administration I 3
ITON 1757 ..... Red Hat Academy System Administration II 3

Certificate Total: 6

Red Hat Certified Engineer (RHCE) Preparation Certificate (2496)

This certificate is intended for individuals who have already earned RHCSA certification or who possess the skills covered on that certification exam. It prepares students for the highly respected Red Hat Certified Engineer (RHCE) exam. The exam is performance-based, and proves the individual's ability to configure networking services and security on servers running a Red Hat Enterprise Linux operating system.

NOTE: *Coursework in this certificate includes a prerequisite that is not included in the certificate. Students with equivalent knowledge and experience may request to have the prerequisite waived. Students who do not have the prerequisite and do not have equivalent knowledge and experience will need to take an additional course.*

ITON 2767 has a prerequisite of ITON 1747 Red Hat Red Hat Academy System Administration I, ITON 1757 Red Hat Academy System Administration II or CNET 2720 Cisco Network Security I: Managing Security; or Red Hat Certified System Administrator (RHCSA) certification or permission of instructor.

ITON 2767 ..... Red Hat Academy System Administration III 3

Certificate Total: 3

Associate of Applied Business Degree

Applied Studies - Computer, Design and Engineering

Media Technology

A media technologist is a communications professional responsible for the assistance and delivery of information to the public through broadcast tools. Individuals with skills in this industry are most often required to understand and operate equipment that electronically conveys a message authored by another person or group. Media professionals are invisible to the outside world; their effective message is the only thing that should be visible of their craft. Designing effective presentations and making them easy for the public to understand is key to success. These messages can arrive to the public through such broadcast vehicles as radio, television, theatrical productions, and the Internet.

Graduates of this degree will have the necessary skills to enter the media industry or to continue their education toward a baccalaureate degree in communications technology. All students will study core skills in areas of broadcast technologies, such as audio, video (film), radio, animation, and interactive design and further in a specialty field in one of the following majors:

- Audio Recording and Production
- Interactive Design and Delivery
- Radio Production and Broadcast
- Video Production and Broadcast

These areas of study create a media professional with specific skills, but the core education in the adjacent areas allow for diversification, so the potential for career opportunities greatly increases. Employment in this field can range from corporate communications and in-house media specialists to freelance production specialists whose entrepreneurial aptitude leads to much success, especially in the film and music production industries. Many people have messages, music, pictures, and opinions that they wish conveyed to others. It is a media technologist that makes this happen in a way that delivers maximum impact.

Certificates are also available.

Audio Recording and Production Technical Major (9275)

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1300	Radio I: Introduction to Radio Production and Broadcast	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
		16

Second Semester:

BUSM 1300	Introduction to Business	3
ENGL 1121	English Composition II - Technical Focus	3
MDIA 1045	Writing for Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1405	Audio II: Recording and Studio Techniques	3
MDIA 1420	Basics of Sound Reinforcement	3
		15

Third Semester:

COMM 1000	Effective Public Speaking	3
MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
MDIA 2400	Audio III: Sound Shaping and Advanced Production	3
MDIA 2420	Foley Sound Design and Recording	2
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the General Electives list.		2
		16

Fourth Semester:

MATH 1600	Survey of College Mathematics	3
MDIA 2080	Staff Practice II	1
MDIA 2405	Audio IV: Advanced Recording and Editing	3
MUSC 2650	Electronic Music I	2
Choose course(s) from the Social & Behavioral Sciences list		3
Choose course(s) from the General Electives list		3
		15

Program Total: 62

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

General Electives: minimum 5 credits

BUSM 1620	Introduction to Entrepreneurship	3
BUSM 1640	Entrepreneurial Management	3
BUSM 1700	Principles of E-Business	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
BUSM 2530	Advertising	3
BUSM 2550	Direct and Internet Marketing	3
COMM 1100	Effective Interpersonal Communication	3
COMM 2000	Advanced Public Speaking	3
COMM 2100	Advanced Interpersonal Communication	3
GRDS 1010	Visual Organization	3
GRDS 1015	Introduction to Typography	3
GRDS 1020	Graphic Design	3
GRDS 1375	Computer Graphics AI, ID, and PS	
ITCS 1010	Programming Logic	3
ITCS 1105	Web Programming I	3
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
ITIS 1100	Internet: Services, Tool, and Web Page Creation	2
ITIS 1108	Using an HTML Editor	2
ITIS 1130	Introduction to Web Design	1
MUSC 2660	Electronic Music II	2
Any course(s) included in the Transfer Module.		

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Interactive Media Design and Delivery Technical Major (9276)

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
		16

Second Semester:

BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1121	English Composition II - Technical Focus	3
MDIA 1045	Writing for Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1505	Interactive Media II: Interactive Production Techniques	3
		15

Third Semester:

MDIA 1540	Interactive Media Design Theory	2
MDIA 1600	Animation I: Introduction to Two and Three-Dimensional Animation	3
MDIA 1700	Interactive Entertainment I: Intro to Entertainment Production	3
MDIA 2500	Interactive Media III: Multiple Media Integration	3
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the General Electives list.		2
		16

Fourth Semester:

MATH 1600	Survey of College Mathematics	3
MDIA 2080	Staff Practice II	1
MDIA 2505	Interactive Media IV: Advanced Interactive Presentation	3
MDIA 2560	Interactive Educational Design.	2
Choose course(s) from the Social & Behavioral Sciences list.		3
Choose course(s) from the General Electives list.		3
		15
	Program Total:	**62**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

General Electives: minimum 5 credits

BUSM 1620	Introduction to Entrepreneurship	3
BUSM 1640	Entrepreneurial Management	3
BUSM 1700	Principles of E-Business	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
BUSM 2530	Advertising	3
BUSM 2550	Direct and Internet Marketing	3
COMM 1100	Effective Interpersonal Communication	3
COMM 2000	Advanced Public Speaking	3
COMM 2100	Advanced Interpersonal Communication	3
GRDS 1010	Visual Organization.	3
GRDS 1015	Introduction to Typography	3
GRDS 1020	Graphic Design.	3
GRDS 1375	Computer Graphics AI, ID, and PS	
ITCS 1010	Programming Logic	3
ITCS 1105	Web Programming I	3
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
ITIS 1100	Internet: Services, Tool, and Web Page Creation	2
ITIS 1108	Using an HTML Editor	2
ITIS 1130	Introduction to Web Design	1
MUSC 2650	Electronic Music I.	2
MUSC 2660	Electronic Music II	2
Any course(s) included in the Transfer Module.		

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Radio Production and Broadcast Technical Major (9277)

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience.	1
MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1060	Vocalization and Diction for Broadcast Media	2
MDIA 1300	Radio I: Introduction to Radio Production and Broadcast.	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording.	3
		15

Second Semester:

BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1121	English Composition II - Technical Focus	3
MDIA 1045	Writing for Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1305	Radio II: Advanced Radio Techniques	3
		15

Third Semester:

MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1320	Live Radio Performance and Engineering	2
MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
MDIA 2300	Radio III: Electronic News Gathering	3
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the General Electives list.		2
		16

Fourth Semester:

MATH 1600	Survey of College Mathematics	3
MDIA 2080	Staff Practice II	1
MDIA 2305	Radio IV: Commercial Radio Production	3
MDIA 2340	Radio Business Techniques and Broadcast Direction	2
Choose course(s) from the Social & Behavioral Sciences list.		3
Choose course(s) from the General Electives list.		3
		15
	Program Total:	**61**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

General Electives: minimum 5 credits

BUSM 1620	Introduction to Entrepreneurship	3
BUSM 1640	Entrepreneurial Management	3
BUSM 1700	Principles of E-Business	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
BUSM 2530	Advertising	3
BUSM 2550	Direct and Internet Marketing	3
COMM 1100	Effective Interpersonal Communication	3
COMM 2000	Advanced Public Speaking	3
COMM 2100	Advanced Interpersonal Communication	3
GRDS 1010	Visual Organization	3
GRDS 1015	Introduction to Typography	3
GRDS 1020	Graphic Design	3
GRDS 1375	Computer Graphics AI, ID, and PS	
ITCS 1010	Programming Logic	3
ITCS 1105	Web Programming I	3
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
ITIS 1100	Internet: Services, Tool, and Web Page Creation	2
ITIS 1108	Using an HTML Editor	2
ITIS 1130	Introduction to Web Design	1
MUSC 2650	Electronic Music I	2
MUSC 2660	Electronic Music II	2
Any course(s) included in the Transfer Module.		

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Video Production and Broadcast Technical Major (9278)

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1060	Vocalization and Diction for Broadcast Media	2
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
		15

Second Semester:

BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1121	English Composition II - Technical Focus	3
MDIA 1045	Writing for Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1205	Video II: Action Videography and Video Technique	3
		15

Third Semester:

MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
MDIA 1600	Animation I: Introduction to Two and Three-Dimensional Animation	3
MDIA 2200	Video III: Electronic News Gathering	3
MDIA 2260	Video Compositing and Special Effects	2
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the General Electives list.		2
		16

Fourth Semester:

MATH 1600	Survey of College Mathematics	3
MDIA 2080	Staff Practice II	1
MDIA 2205	Video IV: Independent Commercial Video Production	3
MDIA 2265	Sports Reporting, Commentary and Videography	2
Choose course(s) from the Social & Behavioral Sciences list.		3
Choose course(s) from the General Electives list.		3
		15
	Program Total:	**61**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

General Electives: minimum 5 credits

BUSM 1620	Introduction to Entrepreneurship	3
BUSM 1640	Entrepreneurial Management	3
BUSM 1700	Principles of E-Business	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
BUSM 2530	Advertising	3
BUSM 2550	Direct and Internet Marketing	3
COMM 1100	Effective Interpersonal Communication	3
COMM 2000	Advanced Public Speaking	3
COMM 2100	Advanced Interpersonal Communication	3
GRDS 1010	Visual Organization	3
GRDS 1015	Introduction to Typography	3
GRDS 1020	Graphic Design	3
GRDS 1375	Computer Graphics AI, ID, and PS	
ITCS 1010	Programming Logic	3
ITCS 1105	Web Programming I	3
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
ITIS 1100	Internet: Services, Tool, and Web Page Creation	2
ITIS 1108	Using an HTML Editor	2
ITIS 1130	Introduction to Web Design	1
MUSC 2650	Electronic Music I	2
MUSC 2660	Electronic Music II	2

Any course(s) included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits
ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Media Technology Certificates

Animation and Cartoon Arts Certificate (2504)

Cartoons and animations have been an active form of entertainment since Edison's kinescope techniques of the late 1800s. This program relies on a foundation of basic cartoon art skills and develops their role in contemporary media industry. Modern animation skills are developed through hands-on training and professional business outcomes. Also included is in-depth analysis and training in three-dimensional animation skills, both for entertainment and industrial applications. This program is designed to meet the needs for gainful employment in the media industry.

MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
MDIA 1600	Animation I: Introduction to Two and Three-Dimensional Animation	3
MDIA 1605	Animation II: Two Dimensional Animation and Cartooning	3
MDIA 1640	Cartoon Animation Drawing	2
MDIA 1700	Interactive Entertainment I: Intro. to Entertainment Production	3
MDIA 2080	Staff Practice II	1
MDIA 2600	Animation III: Three Dimensional Animation	3
MDIA 2605	Animation IV: Advanced Animation	3
MDIA 2660	Virtual Set and World Design	2

Certificate Total: 30

Audio Engineering and Production Certificate (2503)

The audio recording and production industry has been a mainstay of the communications field for many decades. The techniques used to create fine audio programs have been a paramount issue in the media industry. With the advent of modern music and the associated industry promotion, there is an increased interest in this discipline. Lakeland's Audio Engineering and Production certificate program, in keeping with the industry's history of master/apprentice training, provides students with the opportunity to work with a teaching staff well recognized for its accomplishments in the world of broadcast, recording, sound reinforcement, and audio production. With its heavy emphasis on direct application of skills, the program helps prepare students for success in the audio recording and production industry.

MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1300	Radio I: Introduction to Radio Production and Broadcast	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
MDIA 1405	Audio II: Recording and Studio Techniques	3
MDIA 1420	Basics of Sound Reinforcement	3
MDIA 2080	Staff Practice II	1
MDIA 2400	Audio III: Sound Shaping and Advanced Production	3
MDIA 2405	Audio IV: Advanced Recording and Editing	3
MDIA 2420	Foley Sound Design and Recording	2
MUSC 2650	Electronic Music I	2

Certificate Total: 30

Interactive Entertainment Technology Certificate (2505)

Video games have swept the world as both a form of entertainment and as learning tools for many industries. The field and its underlying hardware are one of the key factors in the development of innovational technology. This program sets forth a series of courses that encourage the development of analytical, psychological, and programming techniques to produce entertainment and educational-oriented assets. Through this program of study, students will engage in hands-on study of a field they have enjoyed as a diversion or relaxation and be prepared to work as a member of the media industry's most exciting workforces.

MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
MDIA 1600	Animation I: Introduction to Two and Three-Dimensional Animation	3
MDIA 1640	Cartoon Animation Drawing	2
MDIA 1700	Interactive Entertainment I: Intro. to Entertainment Production	3
MDIA 1705	Interactive Entertainment II: Interactive Game Design Techniques	3
MDIA 1740	Interactive Entertainment Design Theory	2
MDIA 2080	Staff Practice II	1
MDIA 2700	Interactive Entertainment III: Applied Game Logic	3
MDIA 2705	Interactive Entertainment IV: Advanced Game Design and Production	3

Certificate Total: 30

Interactive Media Certificate (2501)

Media integration and presentation have become accepted as one useful form of communication. Be it for a CD-based retail catalog, business Web site, or DVD video, media integration brings together the best possible communications tools to provide efficiency, impact, clarity, and entertainment. Lakeland's Interactive Media (Interactive Web Design) certificate program spans a number of media-related communications disciplines and topics. The study of concepts reinforced with a heavy emphasis on realistic application helps prepare students for employment in a variety of settings.

MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1080	Staff Practice I	1
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
MDIA 1500	Interactive Media I: Introduction to Interactive Production	3
MDIA 1505	Interactive Media II: Interactive Production Technology	3
MDIA 1540	Interactive Media Design Theory	2
MDIA 1600	Animation I: Introduction to Two and Three-Dimensional Animation	3
MDIA 2500	Interactive Media III: Multiple Media Integration	3
MDIA 2505	Interactive Media IV: Advanced Interactive Presentation	3
MDIA 2560	Interactive Educational Design	2
MDIA 2080	Staff Practice II	1

Certificate Total: 30

Radio Production and Broadcast Certificate (2506)

One of the most significant developments of the 20th century was the advent of organized radio transmission. To this day, news, information, and music find radio their marketplace and a pinnacle of the communications industry. Internet radio production has increased dramatically the broadcast reach of the medium and has secured radio's future as a communications giant. This program is designed to provide real-world knowledge and hands-on training in the areas of broadcast, newsgathering, live performances and radio business. Designed to facilitate both broadcast and interactive media applications, this program is designed to meet the needs of students seeking employment in the radio industry.

MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1045	Writing for Broadcast and Interactive Media	2
MDIA 1060	Vocalization and Diction for Broadcast Media	2
MDIA 1080	Staff Practice I	1
MDIA 1300	Radio I: Introduction to Radio Production and Broadcast	3
MDIA 1305	Radio II: Advanced Radio Techniques	3
MDIA 1320	Live Radio Performance and Engineering	2
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
MDIA 2080	Staff Practice II	1
MDIA 2300	Radio III: Electronic News Gathering	3
MDIA 2305	Radio IV: Commercial Radio Production	3
MDIA 2340	Radio Business Techniques and Broadcast Direction	2

Certificate Total: 28

Video Production and Broadcast Certificate (2502)

Our increasing dependence on broadcast television, film, and video as means of communication has helped to further the development of technology necessary for proper production. The advent of internet broadcasting and high capacity satellite transmissions has further increased the need for training in the techniques of communication. Lakeland's Video Production and Broadcast certificate program, designed to provide hands-on training in the areas of broadcast, newsgathering, live performance, and video engineering for both broadcast and interactive media applications, helps prepare students to meet the needs of the video communications industry.

MDIA 1003	Introduction to the Multimedia Computer	1
MDIA 1010	The Business and History of Broadcast and Interactive Media	2
MDIA 1045	Writing for Broadcast and Interactive Media	2
MDIA 1060	Vocalization and Diction for Broadcast Media	2
MDIA 1080	Staff Practice I	1
MDIA 1200	Video I: Introduction to Video Production and Broadcast	3
MDIA 1205	Video II: Action Videography and Video Technique	3
MDIA 1400	Audio I: Introduction to Audio Production and Recording	3
MDIA 2080	Staff Practice II	1
MDIA 2200	Video III: Electronic News Gathering	3
MDIA 2205	Video IV: Independent Commercial Video Production	3
MDIA 2260	Video Compositing and Special Effects	2
MDIA 2265	Sports Reporting, Commentary and Videography	2

Certificate Total: 28

The following courses are suggested as supplementary enrichment to the Media Technology certificates:

ARTS 1120	Art Appreciation	3
ARTS 1130	Art Drawing I	3
ENGL 2215	Graphic Fiction	4
GRDS 1010	Visual Organization	3
GRDS 1350	Computer Graphics AI	3
ITCS 1010	Programming Logic	3
ITCS 1105	Web Programming I	3
ITCS 1820	Java Programming I	3
MUSC 1200	Music Appreciation	3
MUSC 1215	World Music	3
MUSC 1800	Popular Music: Rock, Jazz, Country, Folk, Soul	3
PHOT 1100	Basic Photography	3
OR		
PHOT 1105	Basic Photography - Digital	
PHOT 1400	Commercial Photography	3

Accounting (9210)

Accounting is vital to successful business operations. Accounting graduates can look forward to an exciting and rewarding career in a variety of business settings.

Lakeland's Accounting program recognizes the growing importance of the use of technology. Through the use of accounting-related software, this program provides students with the computer knowledge and skills needed for success in the accounting field.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

Certificates are also available.

First Semester:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1300	Introduction to Business	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FINN 1100	Personal and Family Finance	2
FYEX 1000	First Year Experience	1
MATH 1040**	Applied Business Mathematics	2
MATH 1050**	Mathematics of Finance	2
		17

Second Semester:

ACCT 1200	Introduction to Managerial Accounting	3
ACCT 1270	Financial Analysis Using Spreadsheets	3
ACCT 2150	Accounting Information Systems	3
BUSM 2100	Business Law I	3
ECON 2500	Principles of Macroeconomics	3
OR		
ECON 2600	Principles of Microeconomics	
		15

Third Semester:

ACCT 2100	Intermediate Accounting I	4
ACCT 2110	Managerial Accounting: Cost	4
ACCT 2390	Tax Accounting	4
COMM 1000	Effective Public Speaking	3
		15

Fourth Semester:

ACCT 2200	Intermediate Accounting II	4
ACCT 2210	Managerial Accounting: Finance	4
MATH 2130	Business Statistics I	3
Choose course(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Related Electives list.		3
		17
		Program Total: 64

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Related Electives: minimum 3 credits

BUSM ..... any Business Management (BUSM) course(s) except BUSM 1300 or BUSM 2100
(NOTE: BUSM 2800 is limited to 2 credits)

ECON 2500 ..... Principles of Macroeconomics 3

OR

ECON 2600 ..... Principles of Microeconomics

FINN 1200 ..... Fundamentals of Investing 2

Any Information Technology (ITCS, ITDB, ITIS, ITON) course(s) except ITIS 1520

MATH 1040* ..... Applied Business Mathematics 2

MATH 1050* ..... Mathematics of Finance 2

MATH 2135 ..... Business Statistics II 3

**Students who substitute MATH 1650 or higher for the required combination of MATH 1040 and MATH 1060 can apply MATH 1040 and/or MATH 1050 to their Related Electives credits.*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Accounting Certificates

- Family Financial Planning
- Financial Accounting
- General Accounting
- Small Business Accounting

Family Financial Planning Certificate (2104)

Required:

FINN 1100 ..... Personal and Family Finance 2

FINN 1200 ..... Fundamentals of Investing 2

FINN 1300 ..... Financial Management for the Small Business 3

OR

ECON 2500 ..... Principles of Macroeconomics

MATH 1050 ..... Mathematics of Finance 2

Choose course(s) from the Electives list 3-6

Certificate Total: 12-15

Electives: minimum 3-6 credits

BUSM 2100 ..... Business Law I 3

ECON 2500 ..... Principles of Macroeconomics 3

FINN 1300 ..... Financial Management for the Small Business 3

MATH 1040 ..... Applied Business Mathematics 2

Financial Accounting Certificate (2102)

Although anyone can pursue the Financial Accounting Certificate, it is primarily oriented towards college graduates who wish to acquire education in accounting to advance in their present profession, enter a new profession, or sit for the CPA exam. Students do not need any prior education in either accounting or business to enter this certificate program.

Because of the sequential nature of the material covered in the required courses, all courses except ACCT 1100 include prerequisites. Students are advised to carefully check individual course prerequisites before enrolling in these courses. Because of these prerequisites, this certificate cannot be completed in one year.

NOTE: *ACCT 2120 includes an additional prerequisite of MATH 2130 Business Statistics I (which can be taken concurrently). Students with prior business statistics knowledge may have this prerequisite waived.*

Required: Principles of Accounting Level

ACCT 1100 ..... Introduction to Financial Accounting 4

ACCT 1200 ..... Introduction to Managerial Accounting 3

ACCT 1270 ..... Financial Analysis Using Spreadsheets 3

Subtotal: 10

Required: Above Principles of Accounting Level

ACCT 2100	Intermediate Accounting I	4
ACCT 2110	Managerial Accounting: Cost	4
ACCT 2120*	Auditing Theory and Practice	3
ACCT 2130	Advanced Topics in Accounting	3
ACCT 2140	Ethics and Professional Standards for Accounting	1
ACCT 2150	Accounting Information Systems	3
ACCT 2200	Intermediate Accounting II	4
ACCT 2210	Managerial Accounting: Finance	4
ACCT 2390	Tax Accounting	4

Subtotal: 30
Certificate Total: 40

Recommended Business Courses:
The Financial Accounting certificate covers only the accounting requirements to sit for the CPA exam. Under the new state requirements, CPA candidates must have 24 semester credits of business-oriented courses in addition to 24 semester credits of accounting above the Principles of Accounting level. These business-oriented courses must include coverage in each of the areas of business shown in italics below. Candidates should review courses they have taken to be sure they have coverage in each of the areas of business.

The following courses are not required in the Financial Accounting certificate (except ACCT 2120 and ACCT 2210) but can be used by CPA candidates to help satisfy the business-oriented course requirement:

Business Ethics: Ethics are covered in the following courses:

BUSM 1330	Business Ethics	3

Business Organization:

BUSM 2000	Principles of Management	3

Communication Skills:

BUSM 2400	Business Communication	3

Economics:

ECON 2500	Principles of Macroeconomics	3
ECON 2600	Principles of Microeconomics	3

Group and Individual Behavior:

BUSM 2200	Organizational Behavior	3

Finance:

ACCT 2210	Managerial Accounting: Finance (required course)	4

Legal and Social Environment of Business:

BUSM 2100	Business Law I	3
BUSM 2150	Business Law II	3

Marketing:

BUSM 2500	Principles of Marketing	3

Quantitative Application in Business:

MATH 2130	Business Statistics I	3
MATH 2135	Business Statistics II	3

NOTE: *Additional information regarding the requirements to sit for the CPA exam is available on the Internet at http://ohio.gov or http://business.ohio.gov/licensing.*

General Accounting Certificate (2101)

This certificate is designed for students with little or no college background who are interested in pursuing an entry-level position in accounting. All credits earned can also be applied toward an associate degree in accounting.

Required:

ACCT 1100	Introduction to Financial Accounting	4
ACCT 1200	Introduction to Managerial Accounting	3
ACCT 2100	Intermediate Accounting I	4
ACCT 2110	Managerial Accounting: Cost	4
ACCT 2150	Accounting Information Systems	3
ACCT 2200	Intermediate Accounting II	4
ACCT 2210	Managerial Accounting: Finance	4
Choose course(s) from the Electives list		8

Certificate Total: 34

Electives: minimum 8 credits

ACCT 1270	Financial Analysis Using Spreadsheets	3
ACCT 2120	Auditing Theory and Practice	3
ACCT 2130	Advanced Topics in Accounting	3
ACCT 2140	Ethics and Professional Standards for Accounting	1
ACCT 2390	Tax Accounting	4
BUSM 1300	Introduction to Business	3
BUSM 2100	Business Law I	3
FINN 1200	Fundamentals of Investing	2
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
MATH 1040	Applied Business Mathematics	2
MATH 1050	Mathematics of Finance	2
MATH 1650	College Algebra	4
MATH 2130	Business Statistics I	3

Small Business Accounting Certificate (2103)

This certificate is designed for individuals who are responsible for the accounting and finance functions of a small business. All credits earned can also be applied toward an associate degree in accounting.

Required:

ACCT 1100	Introduction to Financial Accounting	4
ACCT 1200	Introduction to Managerial Accounting	3
ACCT 1270	Financial Analysis Using Spreadsheets	3
ACCT 2100	Intermediate Accounting I	4
ACCT 2110	Managerial Accounting: Cost	4
ACCT 2150	Accounting Information Systems	3
ACCT 2210	Managerial Accounting: Finance	4
ACCT 2390	Tax Accounting	4
FINN 1300	Financial Management for the Small Business	3

Certificate Total: 32

Associate of Applied Business Degree

Applied Studies - Management

Business Management

The Business Management Degree Programs offer a wide variety of options. These choices have evolved as a result of ongoing analyses of and attention to student, employer, and local community needs. The degree now includes six different options or "areas of concentration."

Management is a universal concept which is essential for all organizations, large and small, whether they be for-profit, not-for-profit, or governmental. The Northeastern Ohio area has a continuing demand for trained supervisors, middle managers, administrative assistants, and entrepreneurs, who understand how to plan, organize, direct, communicate, and control business operations. A degree or certificate in management will prepare a student to assume a leadership role within any organization.

A number of courses are common to all Lakeland management degrees. Beyond those basic requirements, students may choose to concentrate either on the broad, generalized field of management, or on management within a number of narrower areas.

Areas of concentration include:

- Business Information Management
- Entrepreneurship
- General Management
- Human Resources Management
- Marketing
- Parks and Recreation Management

Certificates are also available.

Business Information Management Concentration (9222)

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1005	Computers and Information Processing	3
MATH 1040**	Applied Business Mathematics	2
		15

Second Semester:

BUSM 1330	Business Ethics	3
BUSM 2000	Principles of Management	3
ECON 2600	Principles of Microeconomics	3
ITCS 1010	Programming Logic	3
ITIS 1100	Internet: Services, Tool, and Web Page Creation	2
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
		17

Third Semester:

BUSM 2300	Human Resource Management	3
OR		
BUSM 2500	Principles of Marketing	
BUSM 2400	Business Communication	3
ITCS 1105	Web Programming I	3
ITDB 1400	Introduction to SQL	2
ITIS 1520	Microsoft Office Excel: Skills and Techniques	3
ITON 1205	Network+ and Networking Essentials	2
		16

Fourth Semester

ACCT 1100	Introduction to Financial Accounting	4
BUSM 2700	Management Philosophy and Practice	3
ITDB 1405	Oracle PL/SQL Programming	2
ITIS 2015	Information Technology Project Management	3
Choose course(s) from the Arts and Humanities Electives list.		3
		15

Program Total: 63

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

**Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Entrepreneurship Concentration (9215)

This concentration prepares students who plan to start and/or operate their own business. Core courses include coverage of all of the business functions that an owner/manager would be expected to understand while addressing entrepreneurship, small business management, small business finance, and the creation of the new venture.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1300	Introduction to Business	3
BUSM 1620	Introduction to Entrepreneurship	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MATH 1040**	Applied Business Mathematics	2
ITIS 1000***	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	
		17

Second Semester:

ACCT 1270****	Financial Analysis Using Spreadsheets	3
OR		
ACCT 1200	Introduction to Managerial Accounting	
BUSM 1330	Business Ethics	3
BUSM 1640	Entrepreneurial Management	3
COMM 1000	Effective Public Speaking	3
MATH 1050**	Mathematics of Finance	2
		14

Third Semester:

BUSM 2000	Principles of Management	3
BUSM 2400	Business Communication	3
BUSM 2500	Principles of Marketing	3
ECON 2600	Principles of Microeconomics	3
FINN 1300	Financial Management for the Small Business	3
		15

Fourth Semester:

BUSM 2100	Business Law I	3
BUSM 2300	Human Resource Management	3
BUSM 2650	New Venture Creation	3
BUSM 2700	Management Philosophy and Practice	3
Choose course(s) from the Arts and Humanities Electives list.		3
		15

Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

****Students may substitute ITIS 1005. This 3 credit course may be required for students transferring to a four-year college.*

*****Students planning to transfer to a four-year college should take a sequence of accounting courses as advised by their counselor.*

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

General Management Concentration (9224)

This concentration prepares students to be a generalist in the management field and is the most versatile option in terms of the students' selection of courses to meet individual or organizational needs. Core courses include coverage of all of the business functions which a manager would be expected to understand, and a wide variety of elective courses which enable students to select topics of particular relevance to them or their employers.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1000**	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	
MATH 1040***	Applied Business Mathematics	2
		17

Second Semester:

BUSM 1330	Business Ethics	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
ECON 2600	Principles of Microeconomics	3
MATH 1050***	Mathematics of Finance	2
		14

Third Semester:

BUSM 1500	International Business in a Global Environment	3
BUSM 2100	Business Law I	3
BUSM 2200	Organizational Behavior	3
BUSM 2300	Human Resource Management	3
BUSM 2400	Business Communication	3
		15

Fourth Semester:

ACCT 1270****	Financial Analysis Using Spreadsheets	3
OR		
ACCT 1200	Introduction to Managerial Accounting	
BUSM 2700	Management Philosophy and Practice	3
Choose course(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Technical Electives list.		6
		15
		Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute ITIS 1005. This 3 credit course may be required for students transferring to a four-year college.*

****Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

*****Students planning to transfer to a four-year college should take a sequence of accounting courses as advised by their counselor.*

Technical Electives: minimum 6 credits

BUSM 1620	Introduction to Entrepreneurship	3
BUSM 1640	Entrepreneurial Management	3
BUSM 1700	Principles of E-Business	3
BUSM 2150	Business Law II	3
BUSM 2250	Leadership Development	3
BUSM 2330	Employment Practices	3
BUSM 2350	Labor-Management Relations	3
BUSM 2370	Compensation and Benefits	3
BUSM 2380	Training Skills and Techniques	3
BUSM 2520	Marketing of Services	3
BUSM 2530	Advertising	3
BUSM 2550	Direct and Internet Marketing	3

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Human Resources Management Concentration (9225)

This concentration provides students with the knowledge and skills necessary to effectively manage the human resource aspects of a business. Courses address the overall management and planning of staffing requirements, training and development, compensation and benefits, labor management relations, and related topics.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1000**	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	
MATH 1040***	Applied Business Mathematics	2
		17

Second Semester:

BUSM 1330	Business Ethics	3
BUSM 2000	Principles of Management	3
BUSM 2300	Human Resource Management	3
ECON 2600	Principles of Microeconomics	3
MATH 1050***	Mathematics of Finance	2
		14

Third Semester:

BUSM 2100	Business Law I	3
BUSM 2200	Organizational Behavior	3
BUSM 2330	Employment Practices	3
BUSM 2380	Training Skills and Techniques	3
BUSM 2400	Business Communication	3
		15

Fourth Semester:

ACCT 1270****	Financial Analysis Using Spreadsheets	3
OR		
ACCT 1200	Introduction to Managerial Accounting	
BUSM 2350	Labor-Management Relations	3
BUSM 2370	Compensation and Benefits	3
BUSM 2700	Management Philosophy and Practice	3
Choose course(s) from the Arts and Humanities Electives list.		3
		15

Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute ITIS 1005. This 3 credit course may be required for students transferring to a four-year college.*

****Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

*****Students planning to transfer to a four-year college should take a sequence of accounting courses as advised by their counselor.*

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Marketing Concentration (9227)

This concentration prepares students for management or leadership roles in the field of marketing. It enables students to select from a number of relevant courses including advertising, sales, research, and marketing technology.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1300	Introduction to Business	3
COMM 1000	Effective Public Speaking	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1000**	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	
MATH 1040***	Applied Business Mathematics	2
		17

Second Semester:

BUSM 1330	Business Ethics	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
ECON 2600	Principles of Microeconomics	3
MATH 1050***	Mathematics of Finance	2
		14

Third Semester:

BUSM 1400	Professional Personal Selling	3
BUSM 1700	Principles of E-Business	3
BUSM 2100	Business Law I	3
BUSM 2400	Business Communication	3
BUSM 2520	Marketing of Services	3
OR		
BUSM 2550	Direct and Internet Marketing	
OR		
BUSM 2560	International Marketing	
BUSM 2530	Advertising	3
		18

Fourth Semester:

ACCT 1270****	Financial Analysis Using Spreadsheets	3
OR		
ACCT 1200	Introduction to Managerial Accounting	
BUSM 2200	Organizational Behavior	3
BUSM 2700	Management Philosophy and Practice	3
Choose course(s) from the Arts and Humanities Electives list.		3
		12

Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute ITIS 1005. This 3 credit course may be required for students transferring to a four-year college.*

****Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

*****Students planning to transfer to a four-year college should take a sequence of accounting courses as advised by their counselor.*

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Parks and Recreation Management (9236)

This concentration prepares students for a career in the parks and recreation management field. Core courses include coverage of all of the business functions which a manager would be expected to understand, as well as all of the key topics related to the parks and recreation field. In addition, elective courses enable students to select topics of particular relevance to themselves or their employers.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1300	Introduction to Business	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
MATH 1040**	Applied Business Mathematics	2
ITIS 1000***	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	
PARK 1100	Introduction to Parks and Recreation Management	3
		17

Second Semester:

BUSM 1330	Business Ethics	3
BUSM 2000	Principles of Management	3
BUSM 2500	Principles of Marketing	3
ECON 2600	Principles of Microeconomics	3
MATH 1050**	Mathematics of Finance	2
PARK 1200	Recreational Program Planning and Development	3
		17

Third Semester:

BUSM 2100	Business Law I	3
BUSM 2200	Organizational Behavior	3
BUSM 2400	Business Communication	3
PARK 2100	Parks and Recreation Facilities Management	3
POLS 2100	State and Local Government	3
		15

Fourth Semester:

BUSM 2300	Human Resource Management	3
BUSM 2700	Management Philosophy and Practice	3
COMM 1000	Effective Public Speaking	3
PARK 2500	Parks and Recreation Management Internship/Seminar	3-4
Choose course(s) from the Arts and Humanities Electives list.		3
		15-16
		Program Total: 64-65

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

****Students may substitute ITIS 1005. This 3 credit course may be required for students transferring to a four-year college.*

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Business Management Certificates

Lakeland offers ten Business Management and Marketing certificates. All credits earned toward a certificate can also be applied toward an associate degree in business. These certificates provide evidence that a student has completed a focused curriculum program in the specialty area designated by the certificate.

Earning a certificate is often a short-range goal for students planning to pursue a business degree. In addition, students who already have a baccalaureate degree in a non-business field may apply certificates as academic credentials for employment or promotion purposes.

Certificates include:

- Business Information Management
- Business Management
- E-Business
- Entrepreneurship
- Human Resources Management
- Leadership
- Marketing
- Office Communications
- Ohio Real Estate Broker
- Ohio Real Estate Salesperson

Business Information Management Certificate (2221)

Required:

BUSM 1300	Introduction to Business	3
BUSM 1330	Business Ethics	3
BUSM 2000	Principles of Management	3
ITCS 1010	Programming Logic	3
ITIS 1005	Computers and Information Processing	3
ITON 1050	Using Microsoft Windows 7	1
OR		
ITON 1060	Using Microsoft Windows 8	
Choose course(s) from the Electives list.		9
		Certificate Total: 25

Electives: minimum 9 credits

ACCT 1100	Introduction to Financial Accounting	4
BUSM 2300	Human Resource Management	3
OR		
BUSM 2500	Principles of Marketing	
ITCS 1105	Web Programming I	3
ITDB 1400	Introduction to SQL	2
ITDB 1405	Oracle PL/SQL Programming	2
ITIS 1100	Internet: Services, Tools, and Web Page Creation	2
ITIS 1520	Microsoft Office Excel: Skills and Techniques	3
ITIS 2015	Information Technology Project Management	3
ITON 1205	Network+ and Networking Essentials	2

Business Management Certificate (2201)

This certificate is designed for students who are or want to be in management or leadership positions in any type of formal organization setting. Students will learn the concepts and practice of planning, organization theory, leadership, communication, and control processes applied to all types of resources, products, and services.

Required:

BUSM 1300	Introduction to Business	3
BUSM 1330	Business Ethics	3
BUSM 1500	International Business in a Global Environment	3
BUSM 2000	Principles of Management	3
BUSM 2100	Business Law I	3
BUSM 2200	Organizational Behavior	3
BUSM 2300	Human Resource Management	3
Choose course(s) from the Electives list		4
	Certificate Total:	**25**

Electives: minimum 4 credits

ACCT 1100	Introduction to Financial Accounting	4
BUSM 2250	Leadership Development	3
BUSM 2330	Employment Practices	3
BUSM 2350	Labor-Management Relations	3
BUSM 2380	Training Skills and Techniques	3
BUSM 2500	Principles of Marketing	3
BUSM 2800	Business Co-op Experience	1-4
ECON 2600	Principles of Microeconomics	3
Any Information Technology (ITCS, ITDB, ITIS, ITON) course(s)		

E-Business Certificate (2202)

This certificate is designed for students who are working or who want to work in the field of e-business. Courses include all principles of e-business management including legal, marketing, and management. Students may choose electives from technology-based courses ranging from Web design to multimedia.

Required:

BUSM 1300	Introduction to Business	3
BUSM 1330	Business Ethics	3
BUSM 1700	Principles of E-Business	3
BUSM 2500	Principles of Marketing	3
BUSM 2550	Direct and Internet Marketing	3
ECON 2600	Principles of Microeconomics	3
ITIS 1005	Computers and Information Processing	3
ITIS 1130	Introduction to Web Design	1
Choose courses(s) from the Electives List		3
	Certificate Total:	**25**

Electives: minimum 3 credits

ACCT 1100	Introduction to Financial Accounting	4
BUSM 2000	Principles of Management	3
BUSM 2300	Human Resource Management	3
BUSM 2520	Marketing of Services	3
BUSM 2530	Advertising	3
BUSM 2560	International Marketing	3
ITCS 1010	Programming Logic	3
ITCS 1105	Web Programming I	3
ITIS 1108	Using an HTML Editor	2

Entrepreneurship Certificate (2291)

This certificate is designed for students who plan to start and operate their own business or who are already managing in a small business. Courses address all aspects of small business operations, including the legal, financial, marketing, and human resource issues which face the entrepreneur.

Required:

BUSM 1300.....Introduction to Business.....3
BUSM 1620.....Introduction to Entrepreneurship.....3
BUSM 1640.....Entrepreneurial Management.....3
BUSM 2100.....Business Law I.....3
BUSM 2300.....Human Resource Management.....3
BUSM 2500.....Principles of Marketing.....3
BUSM 2650.....New Venture Creation.....3
ECON 2600.....Principles of Microeconomics.....3
FINN 1300.....Financial Management for the Small Business.....3

Certificate Total: 27

Human Resources Management Certificate (2251)

This certificate is designed for students who intend to work in the human resource field. It develops the skills and knowledge required to plan for, acquire, train, evaluate, determine compensation and benefits, and manage performance for the human resources of an organization.

Required:

BUSM 1300.....Introduction to Business.....3
BUSM 1330.....Business Ethics.....3
BUSM 2000.....Principles of Management.....3
BUSM 2300.....Human Resource Management.....3
BUSM 2330.....Employment Practices.....3
BUSM 2350.....Labor-Management Relations.....3
BUSM 2370.....Compensation and Benefits.....3
BUSM 2380.....Training Skills and Techniques.....3
Choose course(s) from the Electives list.....1-3

Certificate Total: 25-27

Electives: minimum 1-3 credits

BUSM 1500.....International Business in a Global Environment.....3
BUSM 2100.....Business Law I.....3
BUSM 2200.....Organizational Behavior.....3
BUSM 2800.....Business Co-op Experience.....1-4
Any Information Technology (ITCS, ITDB, ITIS, ITON) course(s)

Leadership Certificate (2262)

This certificate provides students with the skills to become leaders in their career, personal, and public lives. Students will study the concepts of ethical leadership and management with a strong focus on communication skills.

Required:

BUSM 1300.....Introduction to Business.....3
BUSM 1330.....Business Ethics.....3
BUSM 2000.....Principles of Management.....3
BUSM 2200.....Organizational Behavior.....3
BUSM 2250.....Leadership Development.....3
ENGL 1110*.....English Composition I (A).....3
OR
ENGL 1111.....English Composition I (B)
BUSM 2400.....Business Communication.....3
ENGL 1120.....English Composition II.....3
OR
ENGL 1121.....English Composition II-Technical Focus
Choose course(s) from the Electives list.....3

Certificate Total: 27

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Electives: minimum 3 credits

BUSM 2380 ..... Training Skills and Techniques 3
COMM 1000 ..... Effective Public Speaking 3
COMM 1100 ..... Effective Interpersonal Communication 3

Marketing Certificate (2271)

This certificate is designed to prepare students to manage or work within organizational units related to the field of marketing. Students will study a wide range of subjects including those within the growing fields of direct and Internet marketing, marketing of services, advertising, and others.

Required:

BUSM 1300 ..... Introduction to Business 3
BUSM 1330 ..... Business Ethics 3
BUSM 1400 ..... Professional Personal Selling 3
BUSM 1700 ..... Principles of E-Business 3
BUSM 2500 ..... Principles of Marketing 3
BUSM 2520 ..... Marketing of Services 3
OR
BUSM 2550 ..... Direct and Internet Marketing
OR
BUSM 2560 ..... International Marketing
BUSM 2530 ..... Advertising 3
ECON 2600 ..... Principles of Microeconomics 3
Choose course(s) from the Electives list. 3

Certificate Total: 27

Electives: minimum 3 credits

ACCT 1100 ..... Introduction to Financial Accounting 4
BUSM 2000 ..... Principles of Management 3
BUSM 2200 ..... Organizational Behavior 3
BUSM 2520 ..... Marketing of Services 3
BUSM 2550 ..... Direct and Internet Marketing 3
BUSM 2560 ..... International Marketing 3

Office Communications Certificate (2610)

First Semester:

BUSM 1050* ..... Keyboarding 1
BUSM 1300 ..... Introduction to Business 3
ENGL 1111 ..... English Composition I (B) 4
ITIS 1000 ..... Introduction to Personal Computers 1
OR
ITIS 1005 ..... Computers and Information Processing 3
ENGL 2201 ..... Introduction to Technical Writing 2
ITON 1050 ..... Using Microsoft Windows 7 1
OR
ITON 1060 ..... Using Microsoft Windows 8

12-14

Second Semester:

BUSM 2400 ..... Business Communication 3
COMM 1000 ..... Effective Public Speaking 3
ITIS 1100 ..... Internet Services: Tools and Web Page Creation 2
ITIS 1510 ..... Microsoft Office Word: Skills and Techniques 3
MATH 1040 ..... Applied Business Mathematics 2

13

Certificate Total: 25-27

**May be waived if student can key a minimum of 25 wpm.*

Ohio Real Estate Broker Certificate (2280)

This certificate is designed for students who already have the equivalent of two years of post-secondary education or the equivalent of 60 semester hours, who meet the experience requirements of the Ohio Division of Real Estate, but lack course work in financial management, human resources, applied business economics, and business law.

Required:

BUSM 1300 ..... Introduction to Business 3
BUSM 2100 ..... Business Law I 3
BUSM 2300 ..... Human Resource Management 3
ECON 1150 ..... Basic Economics 3
OR
ECON 2500 ..... Principles of Macroeconomics
OR
ECON 2600 ..... Principles of Microeconomics
REST 1100 ..... Real Estate Principles and Practices 3
REST 1200 ..... Real Estate Finance 2
REST 1300 ..... Real Estate Law 3
REST 1400 ..... Real Estate Appraisal 2
FINN 1300 ..... Financial Management for the Small Business 3
OR
FINN 1500 ..... Applied Finance

Certificate Total: 25

Ohio Real Estate Salesperson Certificate (2072)

Real estate salespersons help clients buy, sell, and rent properties. According to the Bureau of Labor Statistics Occupational Outlook Handbook, (www.bls.gov), employment of real estate sales agents is expected to grow by 11 percent from 2012 to 2022. Courses within the certificate are required by the Ohio Department of Commerce - Division of Real Estate and Professional Licensing to be taken before sitting for the real estate salespersons examination. Students earning this certificate will have completed the education requirements necessary to sit for the Ohio Real Estate Salesperson Exam.

Required:

REST 1100 ..... Real Estate Principles and Practices 3
REST 1200 ..... Real Estate Finance 2
REST 1300 ..... Real Estate Law 3
REST 1400 ..... Real Estate Appraisal 2

Certificate Total: 10

Paralegal Studies (9290)

Paralegals assist attorneys in providing quality legal services to clients. The Paralegal Studies program is designed to provide students with the knowledge and skills needed to assist lawyers in the practice of law.*

The curriculum focuses on building strong research, writing, and analytical skills, while stressing the ethical framework of the law. Upon completion of the curriculum, students will be able to work in a variety of legal settings including law firms, corporations, and government agencies.

All paralegal courses have a practical component, allowing students to practice the legal theories taught in the classroom. The paralegal program concludes with an internship course in which students experience first-hand the paralegal profession.

The Paralegal Studies program is approved by the American Bar Association.

*Paralegals may not provide legal services directly to the public, except as permitted by law. Ohio prohibits the practice of law by non-lawyers.

A certificate is also available.

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
PARL 1100	Introduction to Paralegal Studies	3
POLS 1300	U.S. National Government	3
Choose course(s) from the Mathematics Electives list.		4
		15-17

Second Semester:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
ENGL 1120	English Composition II	3
PARL 1200	Introduction to Legal Research and Writing	3
PARL 1400	Business Issues in the Law	3
PARL 1500	Civil Law and Practice	3
PHIL 2600	Logic	3
		18

Third Semester:

GEOG 1600	World Regional Geography	3
ITIS 1550	Using Microsoft Office: Word and Excel	3
PARL 1250	Advanced Legal Research and Writing	3
PARL 2199	Business Law I (Contract Law)	3
OR		
BUSM 2100	Business Law I	
PARL 2200	Employment Law and the Administrative Process	3
OR		
PARL 2500	Criminal Law and Procedure	
		15

Fourth Semester:

HUMX 1100	Introduction to Humanities	3
PARL 2695**	Legal Workplace Success Strategies	1
PARL 2700**	Legal Internship/Seminar I	3
Choose courses(s) from the Technical Electives list.		6
		13

Program Total: 61-63

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students can take this course during either the third or fourth semester.*

Technical Electives: minimum 6 credits

PARL 2000	Real Estate Law and Practice	2
PARL 2100	Probate Law and Practice	2
PARL 2250	Alternative Dispute Resolution	2
PARL 2350	Legal Issues in Cyberspace	2
PARL 2450	Investigative Fact-Finding	2
PARL 2550	Litigation Management	2
PARL 2650	Family Law	2
PARL 2750	Legal Internship/Seminar II	2

Mathematics Electives: minimum 4 credits

MATH 1040	Applied Business Mathematics	2
MATH 1050	Mathematics of Finance	2
OR		
MATH 1550	Statistics	4

Paralegal Studies Certificate (2901)

Students must meet specific admission requirements for this certificate. Requirements include:

1. Successful completion of ENGL 1110 English Composition I (A) or ENGL 1111 English Composition I (B), and ENGL 1120 English Composition II; or an equivalent of 6 semester credits of college level English composition and literature.
2. Successful completion of an additional 12 semester credits from approved general education courses.
3. Successful completion of an additional 42 semester credit hours.

Students should contact the director of admissions or the Counseling Office for details about applying for admission to this certificate program.

First Semester:

ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
PARL 1100	Introduction to Paralegal Studies	3
PARL 1200	Introduction to Legal Research and Writing	3
PARL 1400	Business Issues in the Law	3
PARL 1500	Civil Law and Practice	3
		13-15

Second Semester:

ITIS 1550	Using Microsoft Office: Word and Excel	3
PARL 1250	Advanced Legal Research and Writing	3
PARL 2200	Employment Law and the Administrative Process	3
OR		
PARL 2500	Criminal Law and Procedure	
PARL 2695	Legal Workplace Success Strategies	1
PARL 2700	Legal Internship/Seminar I	3
Choose course from the Technical Electives list.		2
		15

Certificate Total: 28-30

Technical Electives: minimum 2 credits

PARL 2000	Real Estate Law and Practice	2
PARL 2100	Probate Law and Practice	2
PARL 2250	Alternative Dispute Resolution	2
PARL 2350	Legal Issues in Cyberspace	2
PARL 2450	Investigative Fact-Finding	2
PARL 2550	Litigation Management	2
PARL 2650	Family Law	2
PARL 2750	Legal Internship/Seminar II	2

Civil Engineering Technology (9410)

The Civil Engineering Technology Program (9410) is designed to prepare students for immediate employment with architectural firms, engineering consulting firms, construction management firms, surveyors, contracting firms, residential builders, and with federal, state, county, and city governments. The diverse curriculum allows for students to gain specialized training for careers in architecture, construction, facility management, and surveying. Graduates may also transfer directly to a bachelor's degree program in Civil Engineering Technology, Construction Technology, Surveying, or Architecture.

The Civil Engineering Technology Program (9410) is accredited by the Engineering Technology Accreditation Commission (ETAC) of the Accreditation Board for Engineering and Technology, Inc. ETAC/ABET, 415 N. Charles St., Baltimore, MD 21201, phone: 410.347.7700, www.abet.org.

The Construction Management Program (9413) is not ETAC/ABET accredited.

The Department of Civil Engineering Technology's mission is to provide a quality learning opportunity within Civil Engineering Technology department and to prepare students to further their education at a four-year institution and/or employment in the field of engineering technology. Graduates will be able to: (1) Solve technical problems typical of those encountered in civil engineering technology careers using creativity, current technology and the principles of mathematics and applied science; (2) perform and evaluate standard field testing and laboratory experiments, interpret and report on the results, and make recommendations for improvement in methods or materials; (3) work and communicate effectively in a diverse multi-disciplinary team in an industrial or academic setting; and (4) understand the need to pursue lifelong learning for personal and professional growth.

Certificates are also available.

First Semester:

CIVT 1011	Construction Methods and Materials	3
CIVT 1012	Reading Construction Drawings	1
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
PHYS 1100	Applied Physics I	3
		17

Second Semester:

CIVT 1016	Civil Drafting	3
MATH 1201	Technical Mathematics II	4
MECT 1150	Technical Communications	3
MECT 2110	Engineering Mechanics I	3
PHYS 1200	Applied Physics II	3
		16

Summer Semester:

CIVT 2111	Surveying I	2
CIVT 2112	Surveying II	2
		4

Third Semester:

CIVT 1021	Construction Materials Testing	2
CIVT 2017	Construction Estimating and Scheduling	3
CIVT 2019	Applied Hydraulics	3
MECT 2230	Strength of Materials	3
Choose courses(s) from the Arts and Humanities Electives list.		3
		14

Fourth Semester:

CIVT 2026	Soils and Foundations	3
CIVT 2027	Concrete and Masonry Construction	3
CIVT 2028	Steel and Timber Construction	3
CIVT 2029	Environmental Technology	3
Choose courses(s) from the Technical Electives list.		2
		14

Program Total: 65

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 2 credits

BUSM 2100	Business Law I	3
CIVT 1019	Architectural Building Codes and Standards	2
CIVT 1025	Architectural Design	3
CIVT 1028	Mechanical and Electrical Systems	2
CIVT 2020	Green Building and LEED' Rating System	3
CIVT 2024	Construction Administration and Inspection	3
CIVT 2025	Safety in Construction	2
CIVT 2030	Introduction to GPS Satellite Surveying	2
ENGR 2800	Engineering Co-op Experience	2
GEOG 1700	Geographic Information Science I	3
GEOG 2700	Geographic Information Science II	4

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Construction Management (9413)

This program prepares students for careers in the construction field with an emphasis on residential and light commercial building construction. The curriculum blends two major content areas: building construction technologies and business management. Professionals in this field need to have a thorough background in site development, building methods and materials, contract documents, plans and specifications, estimating, bidding, scheduling, building codes, legal principles, project administration, inspection, quality assurance, finances, sound business practices, and people skills. Graduates can enter the workforce in management positions with homebuilders, commercial builders, equipment installers, facility managers, general contractors, specialty contractors, building departments, and construction material manufactures and retailers. Job classifications may include estimators, superintendents, project managers, inspectors, facility managers, and sales and technical support technicians.

First Semester:

CIVT 1011	Construction Methods and Materials	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1001**	Introduction to Technical Mathematics	4
OR		
MATH 1650	College Algebra	
(1st 8 weeks)		
CIVT 1012	Reading Construction Drawings	1
(2nd 8 weeks)		
CIVT 1019	Architectural Building Codes and Standards	2
		16

Second Semester:

BUSM 1300	Introduction to Business	3
CIVT 1016	Civil Drafting	3
CIVT 1021	Construction Materials Testing	2
MECT 1150	Technical Communications	3
PHYS 1100***	Applied Physics I	3
OR		
PHYS 1610	General Physics I	5
		14-16

Third Semester:

BUSM 1620	Introduction to Entrepreneurship	3
BUSM 2100	Business Law I	3
CIVT 1410	Building Construction I	3
CIVT 2018	Construction Estimating	3
CIVT 2025	Safety in Construction	2
Choose course(s) from the Arts and Humanities Electives list.		3
		17

Fourth Semester:

BUSM 1400	Professional Personal Selling	3
CIVT 2016	Scheduling and Building Information Modeling	3
CIVT 2020	Green Building and LEED' Rating System	3
CIVT 2024	Construction Administration and Inspection	3
Choose course(s) from the Social & Behavioral Sciences list.		3
		15

Program Total: 62-64

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to Kent State University must take MATH 1650.*

****Students planning to transfer to Kent State University must take PHYS 1610.*

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits
ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Civil Engineering Technology Certificates

These certificates help students gain valuable experience in a specialization. Cooperative education will play an integral role in the students experience and growth.

- Construction Management
- Facility Management

Construction Management Certificate (4131)

BUSM 2100	Business Law I	3
CIVT 1011	Construction Methods and Materials	3
CIVT 1012	Reading Construction Drawings	1
CIVT 1016	Civil Drafting	3
CIVT 1019	Architectural Building Codes and Standards	2
CIVT 1021	Construction Materials Testing	2
CIVT 2016	Scheduling and Building Information Modeling	3
CIVT 2018	Construction Estimating	3
CIVT 2020	Green Building and LEED' Rating System	3
CIVT 2024	Construction Administration and Inspection	3
CIVT 2025	Safety in Construction	2
ENGR 1000	Introduction to Engineering Technology	2
ENGR 2800	Engineering Co-op Experience	1
MATH 1001	Introduction to Technical Mathematics	4
PHYS 1100	Applied Physics I	3

Certificate Total: 38

Facility Management Certificate (4141)

BUSM 2100	Business Law I	3
CIVT 1011	Construction Methods and Materials	3
CIVT 1012	Reading Construction Drawings	1
CIVT 1016	Civil Drafting	3
CIVT 1019	Architectural Building Codes and Standards	2
CIVT 1028	Mechanical and Electrical Systems	2
CIVT 2017	Construction Estimating and Scheduling	3
CIVT 2024	Construction Administration and Inspection	3
CIVT 2025	Safety in Construction	2
ENGR 1000	Introduction to Engineering Technology	2
ENGR 2800	Engineering Co-op Experience	1
MATH 1001	Introduction to Technical Mathematics	4
MECT 1150	Technical Communications	3

Certificate Total: 32

Associate of Applied Science Degree

Applied Studies - Computer, Design and Engineering Technologies

Computer Integrated Manufacturing Technology

Lakeland's Computer Integrated Manufacturing Technology degree program prepares students for employment in a variety of manufacturing industries. There are two choices available to students in this degree program:

- General Manufacturing Major (AWT)
- Maintenance and Repair Concentration (AWT, ArcelorMittal)

Both degrees are approved by the AWT (Alliance for Working Together http://thinkmfg.com/) to meet employment needs throughout the Alliance in Northeast Ohio. The Maintenance and Repair Concentration also offers an option for becoming a mechanical maintenance and repair technician at ArcelorMittal Cleveland.

Certificates are also available.

General Manufacturing Major (9430)

The General Manufacturing major prepares students for employment as engineering technicians at the operations level in manufacturing industries having a concentration in computer applications. Technicians assist in the design and implementation of manufacturing process systems that include numerical control equipment, computer aided part programming, computer aided manufacturing, factory automation, and flexible manufacturing cells and systems.

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining experience for CIMN 1110.*

First Semester:

CADT 1100	Introduction to AutoCAD	3
COMM 1050*	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
CIMN 1110	Machining Processes	3
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111**	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1001	Introduction to Technical Mathematics	4
		18

Second Semester:

CIMN 1210	Materials Processing	3
MATH 1101	Technical Mathematics I	4
MECT 1150	Technical Communications	3
MECT 1600	Geometric Dimensioning and Tolerancing	2
PHYS 1100	Applied Physics I	3
		15

Third Semester:

CADT 2100	Introduction to SolidWorks	3
CIMN 2190	Manufacturing Methods and Costs	3
CIMN 2240	Jig and Fixture Design I	3
PHYS 1200	Applied Physics II	3
(1st 8 weeks)		
CIMN 1420	Computer Numerical Control Part Programming	2
(2nd 8 weeks)		
CIMN 1430	Introduction to Computer Assisted Part Programming	2
		16

Fourth Semester:

CIMN 1450	Programming CNC Lathes	2
CIMN 1460	Programming CNC Machining Centers	2
CIMN 2875	Design and Manufacturing Capstone	3
QENT 1200	Quality Concepts and Techniques	2
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
Choose course(s) from the Technical RelatedElectives list***		2
		17

Program Total: 66

**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

***English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

****Students who want to fulfill the AWT requirement should take ENGR 2800.*

Technical Electives: minimum 2 credits

BUSM 1800	Essentials of Management and Supervision	3
CADT 1500	Advanced AutoCAD	3
CADT 2500	Advanced SolidWorks	3
CIMN 1160	Applied Electricity	2
CNET 1100	Cisco Networking Technology I	2
CPET 1120	C Programming for Engineering Technology	3
CPET 1200	Visual Basic for Engineering Technology I	2
ENGR 2800	Engineering Co-Op Experience	1-3
WELD 1220	Oxyfuel Gas Welding	2
WELD 1240	Stick Welding	2
WELD 1255	FCAW and GMAW (MIG/MAG) Welding	3
WELD 1265	GTAW (TIG) Welding	3
WELD 2010	Pipe Welding	3

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Maintenance and Repair Concentration (9439)

The Maintenance and Repair Concentration prepares graduates for repairing and maintaining equipment in an industrial environment.

The AWT option is designed to meet AWT employment needs throughout the Alliance in Northeast Ohio. See http://thinkmfg.com/.

The ArcelorMittal Endorsed Option for the Maintenance and Repair Concentration (ArcelorMittal Steelworker for the Future Program) is for students wanting a career as a maintenance technician mechanical at ArcelorMittal Cleveland. The Steelworker for the Future program is a partnership with Lakeland Community College, ArcelorMittal Cleveland, and the United Steelworkers Local 979 designed to prepare students for successful careers as mechanical maintenance or electrical maintenance technicians in the steel industry. Steelworker for the Future is an estimated 2.5-year program that includes four semesters of classroom training, plus up to 16 weeks of paid on-the-job (co-op) training at ArcelorMittal Cleveland for students who pass the company's hiring requirements. Students will earn an Associate of Applied Science (AAS) degree and can be eligible for hire at ArcelorMittal upon completion of the program. (Students are not required to work for ArcelorMittal, nor are they guaranteed employment at ArcelorMittal.) For more information about the program and to apply go to http://steelworkerforthefuture.com/

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining experience for CIMN 1110.*

First Semester:

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
COMM 1050*	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1001	Introduction to Technical Mathematics	4
		18

Second Semester:

CIMN 1160	Applied Electricity	2
CIMN 1210	Materials Processing	3
MATH 1101	Technical Mathematics I	4
MECT 1150	Technical Communications	3
PHYS 1100	Applied Physics I	3
Choose course(s) from the Technical Electives list		2
		17

Third Semester:

MECT 2150	Power Transmission	2
PHYS 1200	Applied Physics II	3
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Technical Electives list		4
		12

Fourth Semester:

CIMN 2390	Fluid Power Technology	3
CIMN 2840	Repair and Maintenance Capstone	2
QENT 1200	Quality Concepts and Techniques	2
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
Choose course(s) from the Technical Electives list***		6
		16
		Program Total: 63

**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

***English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 12 credits

Students are required to develop an area of emphasis in the program through the selection of technical electives. Options include:

- Maintenance and Repair Option
- AWT Endorsed Option (Alliance for Working Together Consortium)
- ArcelorMittal Endorsed Option

The **Maintenance and Repair Option** requires the following elective course:

MECT 1600	Geometric Dimensioning and Tolerancing	2

The **AWT Endorsed Option** requires all of the following elective courses:

MECT 1600	Geometric Dimensioning and Tolerancing	2
ENGR 2800*	Engineering Co-Op Experience	1

**The co-op experience(s) with a company in the AWT will have a maximum of 2 credits.*

The **ArcelorMittal Endorsed Option** requires all of the following elective courses:

WELD 1220	Oxyfuel Gas Welding	2
WELD 1240	Stick Welding	2
WELD 1255	FCAW and GMAW (MIG/MAG) Welding	3
WELD 1265	GTAW (TIG) Welding	3
ENGR 2800*	Engineering Co-Op Experience	1
ENGR 2800*	Engineering Co-Op Experience	1

**There are two co-op experiences, each with ArcelorMittal, for a maximum of 2 credits.*

Students are required to choose the remaining technical electives from the following list of courses:

CADT 1500 ..... Advanced AutoCAD 3
CADT 2100 ..... Introduction to SolidWorks 3
CADT 2500 ..... Advanced SolidWorks 3
CIMN 1420 ..... Computer Numerical Control Part Programming (CNC) 2
CIMN 1430 ..... Introduction to Computer Assisted Part Programming 2
CIMN 1450 ..... Programming CNC Lathes 2
CIMN 1460 ..... Programming CNC Machining Centers 2
CIMN 2190 ..... Manufacturing Methods and Costs 3
CIMN 2240 ..... Jig and Fixture Design I 3
CNET 1100 ..... Cisco Networking Technology I 2
CNET 1200 ..... Cisco Networking Technology II 2
CNET 1300 ..... Cisco Networking Technology III 2
CPET 1120 ..... C Programming for Engineering Technology 3
ENGR 2800 ..... Engineering Co-Op Experience 1-2
(NOTE: There is a maximum of 2 credits for ENGR 2800)
MECT 1600 ..... Geometric Dimensioning and Tolerancing 2
WELD 1220 ..... Oxyfuel Gas Welding 2
WELD 1240 ..... Stick Welding 2
WELD 1255 ..... FCAW and GMAW (MIG/MAG) Welding 3
WELD 1265 ..... GTAW (TIG) Welding 3
WELD 2010 ..... Pipe Welding 3

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits
ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Computer Integrated Manufacturing Technology Certificates

- CNC Operator Mini Certificate
- CNC Set-Up and Programming Technology
- Computer Integrated Manufacturing Technology
- Industrial Computer Hardware Technician
- Production Shift Leader/Manufacturing Management
- Tool and Die Technology
- Tool Room/Maintenance Machinist Apprentice

CNC Operator Mini Certificate (4315)

NOTE: *Some courses in this certificate are available only on weekends.*

NOTE: *Courses below the 1000 level can not be used to meet degree requirements.*

CIMN 0950 ..... Introduction to Machine-Tool Technology 2
CIMN 0980 ..... Manufacturing Shop Mathematics 2
CIMN 0990 ..... Basic Blueprint Reading and Sketching 2
OR
CADT 1100 ..... Introduction to AutoCAD 3
CIMN 1420 ..... Computer Numerical Control Part Programming (CNC) 2
CIMN 1450 ..... Programming CNC Lathes 2
CIMN 1460 ..... Programming CNC Machining Centers 2
ENGR 1000 ..... Introduction to Engineering Technology 2

Certificate Total: 14-15

CNC Set-Up and Programming Technology Certificate (4312)

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology and CIMN 0960 Introduction to Machine-Tool Set-Up and CAM helpful to gain the required knowledge and experience for CIMN 1110 and CIMN 1420.*

NOTE: *Courses below the 1000 level can not be used to meet degree requirements.*

CIMN 0980	Manufacturing Shop Mathematics	2
OR		
MATH 1001	Introduction to Technical Mathematics	4
CADT 1100	Introduction to AutoCAD	3
CADT 1500	Advanced AutoCAD	3
CIMN 1110	Machining Processes	3
CIMN 1420	Computer Numerical Control Part Programming (CNC)	2
CIMN 1430	Introduction to Computer Assisted Part Programming	2
CIMN 1450	Programming CNC Lathes	2
CIMN 1460	Programming CNC Machining Centers	2
ENGR 1000	Introduction to Engineering Technology	2
MECT 1150	Technical Communications	3

Certificate Total: 24-26

Computer Integrated Manufacturing Technology Certificate (4311)

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology and CIMN 0960 Introduction to Machine-Tool Set-Up and CAM helpful to gain the required knowledge and experience for CIMN 1110 and CIMN 1420.*

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
CIMN 1210	Materials Processing	3
CIMN 1420	Computer Numerical Control Part Programming (CNC)	2
CIMN 1430	Introduction to Computer Assisted Part Programming	2
CIMN 2190	Manufacturing Methods and Costs	3
CIMN 2240	Jig and Fixture Design I	3
ENGR 1000	Introduction to Engineering Technology	2
MATH 1001	Introduction to Technical Mathematics	4
MECT 1150	Technical Communications	3

Certificate Total: 28

Industrial Computer Hardware Technician Certificate (4241)

NOTE: *CPET 1050 has a prerequisite of prior exposure to applied technologies or successful completion of the CIM or ET Tech Prep programs. Students can take CIMN 0970 Introduction to Electrical Devices and Controls to gain the required knowledge and experience, if necessary. Students with prior experience should contact the Mathematics, Engineering Technologies, Natural & Social Sciences Office to schedule the proficiency exam for CIMN 0970.*

ENGR 1000	Introduction to Engineering Technology	2
CNET 1100	Cisco Networking Technology I	2
CPET 1050	Assembling, Upgrading and Repairing Personal Computers	2
CPET 1200	Visual Basic for Engineering Technology I	2
CPET 2050	Advanced Assembly and Repair of Personal Computers	2
ITON 1050	Using Microsoft Windows 7	1
ITON 1205	Network+ and Networking Essentials	2
ITON 2050	Windows 7 Configuration	2

Certificate Total: 15

Production Shift Leader/Manufacturing Management Certificate (4351)

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining machining experience for CIMN 1110.*

BUSM 1300	Introduction to Business	3
BUSM 1800	Essentials of Management and Supervision	3
BUSM 2200	Organizational Behavior	3
CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
CIMN 1210	Materials Processing	3
CIMN 2190	Manufacturing Methods and Costs	3
ENGR 1000	Introduction to Engineering Technology	2
MATH 1001	Introduction to Technical Mathematics	4
MECT 1150	Technical Communications	3

Certificate Total: 30

Tool and Die Technology Certificate (4303)

NOTE: *Courses below the 1000 level cannot be used to meet degree requirements.*

First Semester:

CIMN 0950	Introduction to Machine-Tool Technology	2
CIMN 0960	Introduction to Machine-Tool Set-Up and CAM	2
		4

Second Semester:

ENGR 1000	Introduction to Engineering Technology	2
MATH 1001	Introduction to Technical Mathematics	4
		6

Third Semester:

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
		6

Fourth Semester:

MECT 1150	Technical Communications	3
MECT 1600	Geometric Dimensioning and Tolerancing	2
		5

Fifth Semester:

CADT 1500	Advanced AutoCAD	3
CIMN 2240	Jig and Fixture Design I	3
		6

Sixth Semester:

CIMN 1210	Materials Processing	3
		3

Certificate Total: 30

Tool Room/Maintenance Machinist Apprentice Certificate (4302)

NOTE: *Courses below the 1000 level cannot be used to meet degree requirements.*

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful to gain the required knowledge and experience for CIMN 1110.*

First Semester:

CIMN 0990	Basic Blueprint Reading and Sketching	2
MATH 0890	Pre-Technical Mathematics	3
		5

Second Semester:

ENGR 1000	Introduction to Engineering Technology	2
MATH 1001	Introduction to Technical Mathematics	4
		6

Third Semester:

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
		6

Fourth Semester:

CIMN 1210	Materials Processing	3
		3

Fifth Semester:

CIMN 1420	Computer Numerical Control Part Programming (CNC)	2
		2

Sixth Semester:

CIMN 1450	Programming CNC Lathes	2
CIMN 1460	Programming CNC Machining Centers	2
		4

Certificate Total: 26

Electronic Engineering Technology

The Department of Electronic Engineering Technology's mission is to provide a quality learning environment within the Electronic Engineering Technology discipline. Its purpose is to prepare students to further their education at a four-year institution and/or gain employment within the field of engineering technology.

Program Educational Objectives: Graduates will be able to: (1) solve technical problems typical of those encountered in the electronic engineering technology discipline by using critical thinking skills, current technology, and principles of mathematics and applied science; (2) work and communicate effectively in multidisciplinary teams in both industrial and academic settings; and (3) understand current professional issues and the need to pursue lifelong learning.

Program Requirements: Students must have placed into MATH 1101 and ENGL 1110 prior to registering for any ELEC courses. A minimum grade of "C" or higher is required for every ELEC, MATH, and PHYS course listed within the program schedule.

Electronic Engineering Technology Program (9420) is accredited by the Engineering Technology Accreditation Commission (ETAC) of the Accreditation Board for Engineering and Technology, Inc. ETAC/ABET, 415 N. Charles St., Baltimore, MD 21201, phone: 410.347.7700, www.abet.org.

The Industrial Electronics Concentration/Program (9419) is not ABET accredited.

NOTE: Students transferring to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.

Certificates are also available.

Electronic Engineering Technology (9420)

First Semester:

ELEC 1120	Direct Current Circuit Analysis	2
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
PHYS 1100	Applied Physics I	3
		15

Second Semester:

CPET 1120	C Programming for Engineering Technology	3
ELEC 1220	Alternating Current Circuit Analysis	2
ELEC 1260	Direct Current and Alternating Current Laboratory	1
ELEC 1330	Digital Systems Fundamentals	2
MATH 1201	Technical Mathematics II	4
PHYS 1200	Applied Physics II	3
		15

Third Semester:

ECON 1150	Basic Economics	3
OR		
ECON 2500	Principles of Macroeconomics	
OR		
ECON 2600	Principles of Microeconomics	
ELEC 2120	Linear and Switch-Mode Power Supplies	2
ELEC 2420	Microcontroller Applications	2
ELEC 2460	Digital Systems and Microcontroller Laboratory	1
ELEC 2821	Programmable Logic Controllers	3
HUMX 1100	Introduction to Humanities	3
Choose course(s) from the Technical Electives list.		2
		16

Fourth Semester:

COMM 1100	Effective Interpersonal Communication	3
OR		
COMM 1000	Effective Public Speaking	
ELEC 2150	Operational Amplifiers and Linear Integrated Circuits	2
ELEC 2170	Power Supply and Integrated Circuits Laboratory	1
ELEC 2300	Sensors, Actuators, and Control	3
ELEC 2600	Robotics Project Lab	3
ELEC 2700	Motor Control and Servo Systems	3
		15

Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 2 credits

CPET 1200	Visual Basic for Engineering Technology I	2
ELEC 1400	Stand-Alone Photovoltaic Systems	2
ELEC 2000	Electronic Technology Field Experience	2
ELEC 2850	Advanced Programmable Controller Applications	2

Industrial Electronics Concentration (9419)

NOTE: *Students transferring to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

ELEC 1120	Direct Current Circuit Analysis	2
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
PHYS 1100	Applied Physics I	3
		15

Second Semester:

COMM 1100	Effective Interpersonal Communication	3
OR		
COMM 1000	Effective Public Speaking	
ELEC 1220	Alternating Current Circuit Analysis	2
ELEC 1260	Direct Current and Alternating Current Laboratory	1
ELEC 1330	Digital Systems Fundamentals	2
MATH 1201	Technical Mathematics II	4
NUET 1200	Plant Drawings	3
Choose course(s) from the Technical Electives list.		2
		17

Third Semester:

ELEC 2120	Linear and Switch-Mode Power Supplies	2
ELEC 2125	Industrial Electricity and Electronics	3
ELEC 2650	Industrial Power Systems and Apparatus	3
ELEC 2821	Programmable Logic Controllers	3
MECT 2150	Power Transmission	2
PHYS 1200	Applied Physics II	3
		16

Fourth Semester:

ECON 1150	Basic Economics	3
OR		
ECON 2500	Principles of Macroeconomics	
OR		
ECON 2600	Principles of Microeconomics	
ELEC 2550	Industrial Control Systems and Instrumentation	3
ELEC 2700	Motor Control and Servo Systems	3
ELEC 2750	Industrial Problem Solving and Teamwork Capstone	2
ELEC 2850	Advanced Programmable Controller Applications	2
HUMX 1100	Introduction to Humanities	3
		16

Program Total: 64

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 2 credits

NOTE: *Students selecting the ArcelorMittal program must take two separate ENGR 2800 co-op experiences, each for 1 credit. The co-op experiences are to be taken during the Summer semesters as arranged with ArcelorMittal.*

CPET 1200	Visual Basic for Engineering Technology I	2
ELEC 1400	Stand-Alone Photovoltaic Systems	2
ELEC 2000	Electronic Technology Field Experience	2
ENGR 2800	Engineering Co-Op Experience	1-2

Electronic Engineering Technology Certificates

- A+ Computer Maintenance and Repair
- Electronic Systems Fundamental
- Advanced Electronics Technology
- Industrial Electronics

A+ Computer Maintenance and Repair Certificate (4252)

NOTE: *CPET 1050 has a prerequisite of prior exposure to applied technologies or successful completion of the CIM or ET Tech Prep programs. Students can take CIMN 0970 Introduction to Electrical Devices and Controls to gain the required knowledge and experience, if necessary. Students with prior experience should contact the Applied Studies Office to schedule the proficiency exam for CIMN 0970.*

CPET 1050	Assembling, Upgrading and Repairing Personal Computers	2
CPET 2050	Advanced Assembly and Repair of Personal Computers	2
CPET 2060	Preparation for A+ Certification	2

Certificate Total: 6

Electronic Systems Fundamentals Certificate (4220)

CPET 1120	C Programming for Engineering Technology	3
ELEC 1120	Direct Current Circuit Analysis	2
ELEC 1220	Alternating Current Circuit Analysis	2
ELEC 1260	Direct Current and Alternating Current Laboratory	1
ELEC 1330	Digital Systems Fundamentals	2
ELEC 2120	Linear and Switch-Mode Power Supplies	2
MATH 1101	Technical Mathematics I	4
MATH 1201	Technical Mathematics II	4

Certificate Total: 20

Advanced Electronics Technology Certificate (4201)

Completion of the Electronic Systems Fundamentals Certificate		20
ELEC 1400	Stand-Alone Photovoltaic Systems	2
ELEC 2150	Operational Amplifiers and Linear Integrated Circuits	2
ELEC 2170	Power Supply and Integrated Circuits Laboratory	1
ELEC 2420	Microcontroller Applications	2
ELEC 2460	Digital Systems and Microcontroller Laboratory	1
ELEC 2600	Robotics Project Lab	3

Certificate Total: 31

Industrial Electronics Certificate (4221)

This certificate is designed for students with residential or industrial wiring experience and a working knowledge of the National Electrical Code.

Completion of the Electronic Systems Fundamentals Certificate		20
ELEC 2300	Sensors, Actuators, and Control	3
ELEC 2700	Motor Control and Servo Systems	3
ELEC 2810	Current Local and National Electrical Codes	3
ELEC 2821	Programmable Logic Controllers	3
ELEC 2850	Advanced Programmable Controller Applications	2
NUET 1200	Plant Drawings	3

Certificate Total: 37

Mechanical Engineering Technology

The Mechanical Engineering Technology Program is designed to prepare students for immediate employment as a technician. The curriculum includes a strong emphasis on the generation of production-level computer-based documentation, analysis of form, fit and function, and design verification through testing. Graduates will be able to: (1) solve technical problems typical of those encountered in mechanical engineering technology careers using creativity, current technology, and the principles of mathematics and applied science; (2) perform and evaluate laboratory experiments, interpret and report on the results, and make recommendations for improvements; (3) work and communicate effectively in a diverse multi-disciplinary team in an industrial and academic setting; and (4) understand modern quality principles, professional issues, and the need to pursue lifelong learning.

There are two choices available to students in this degree program. Both degrees are designed to prepare students for immediate employment as a technician.

- Mechanical Engineering Technology (9440): This degree is accredited by the Engineering Technology Accreditation Commission (ETAC) of the Accreditation Board for Engineering and Technology, Inc. ETAC/ABET, 415 N. Charles St., Baltimore, MD 21201, phone: 410.347.7700, www.abet.org. It is the best choice for students wanting to pursue a four-year technology degree, or have additional analysis skills as a technician.
- Computer Assisted Product Design Concentration: This degree prepares the graduate to work as a technician with skills in CAD and product design. Additional courses are necessary to pursue a four-year mechanical engineering technology degree, and this degree is not accredited by the Engineering Technology Accreditation Commission of ABET.

Certificates are also available.

Mechanical Engineering Technology (9440)

This concentration emphasizes the design and analysis of mechanical elements.

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining experience for CIMN 1110.*

First Semester:

CADT 1100	Introduction to AutoCAD	3
CIMN 1110	Machining Processes	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
PHYS 1100	Applied Physics I	3
		19

Second Semester:

CIMN 1210	Materials Processing	3
ENGL 1121	English Composition - Technical Focus	3
MATH 1201	Technical Mathematics II	4
MECT 1600	Geometric Dimensioning and Tolerancing	2
MECT 2110	Engineering Mechanics I	3
PHYS 1200	Applied Physics II	3
		18

Third Semester:

CADT 2100	Introduction to SolidWorks	3
COMM 1050**	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
MECT 2210	Engineering Mechanics II	3
MECT 2230	Strength of Materials	3
Choose course(s) from the Arts and Humanities Electives list.		3
		14

Fourth Semester:

CIMN 1160	Applied Electricity	2
CIMN 2390	Fluid Power Technology	3
CIMN 2875	Design and Manufacturing Capstone	3
MECT 2600	Design of Machine Elements	2
QENT 1200	Quality Concepts and Techniques	2
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
		15

Program Total: 66

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Computer Aided Design Concentration (9444)

This concentration emphasizes using CAD (computer aided design) for layout, design, and creating drawings in mechanical and industrial applications. This degree is approved by the AWT (Alliance for Working Together http://thinkmfg.com/) to meet employment needs throughout the Alliance in Northeast Ohio.

NOTE: *Students without prior exposure to machining will find CIMN 0950 Introduction to Machine-Tool Technology helpful in gaining experience for CIMN 1110.*

First Semester:

CADT 1100	Introduction to AutoCAD	3
COMM 1050*	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
CIMN 1110	Machining Processes	3
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
MATH 1001	Introduction to Technical Mathematics	4
		18

Second Semester:

CADT 1500	Advanced AutoCAD	3
CIMN 1160	Applied Electricity	2
CIMN 1210	Materials Processing	3
MATH 1101	Technical Mathematics I	4
MECT 1150	Technical Communications	3
MECT 1600	Geometric Dimensioning and Tolerancing	2
		17

Third Semester:

CADT 2100	Introduction to SolidWorks	3
CIMN 2240	Jig and Fixture Design I	3
MECT 2250	Mechanism Design	3
PHYS 1100	Applied Physics I	3
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
		15

Fourth Semester:

CADT 2500	Advanced SolidWorks	3
CIMN 2875	Design and Manufacturing Capstone	3
PHYS 1200	Applied Physics II	3
QENT 1200	Quality Concepts and Techniques	2
Choose course(s) from the Arts and Humanities Electives list.		3
		14

Program Total: 64

**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

***English course selection is based on placement rest results (ENGL 1111 is 4 credits; only 3 credits apply to the degree).*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Mechanical Engineering Technology Certificates

- AutoCAD Operator Certificate
- CAD Design Certificate

AutoCAD Operator Certificate (4443)

CADT 1100	Introduction to AutoCAD	3
CADT 1500	Advanced AutoCAD	3
ENGR 1000	Introduction to Engineering Technology	2

Certificate Total: 8

CAD Design Certificate (4442)

CADT 1100	Introduction to AutoCAD	3
CADT 1500	Advanced AutoCAD	3
CADT 2100	Introduction to SolidWorks	3
CADT 2500	Advanced SolidWorks	3
ENGR 1000	Introduction to Engineering Technology	2

Certificate Total: 14

Applied Studies - Computer, Design and Engineering Technologies

Network Infrastructure Engineering Technology

Lakeland's Network Infrastructure Engineering Technology degree program is interdisciplinary in nature, offering three concentrations as follows:

• Network Infrastructure Security Concentration

• Cisco Network Infrastructure Concentration

• Microsoft Infrastructure Concentration

The Network Infrastructure Security Concentration blends networking technology and information systems coursework, emphasizing secure configuration of both operation systems and network infrastructure. The course topics for this concentration include Microsoft Windows together with Linux/Unix management and security, as well as network security via Cisco Academy training. These elements are brought together by stressing information assurance and secure network design.

The Cisco Network Infrastructure Concentration combines an in depth program of networking technology together with electric circuits, computer hardware, and applied programming. Major emphasis is placed on professional level Cisco certification.

The Microsoft Network Infrastructure Concentration features a combination of operating system instruction together with electric circuits, microprocessors, digital systems, and applied programming. Major emphasis is placed on profession level Microsoft certification.

Certificates are also available.

Network Infrastructure Security Concentration (9438)

First Semester:

COMM 1050*.....Fundamentals of Public Speaking.....2
OR
COMM 1150.....Fundamentals of Interpersonal Communication
ENGL 1110** .....English Composition I (A).....3
OR
ENGL 1111 .....English Composition I (B)
FYEX 1000.....First Year Experience.....1
ITIS 1030 .....Security Awareness.....1
Choose course(s) from the Social and Behavioral Sciences Electives list. 3
(1st 8 weeks)
CNET 1100 .....Cisco Networking Technology I 2
ENGR 1000 .....Introduction to Engineering Technology 2
(2nd 8 weeks)
CNET 1200 .....Cisco Networking Technology II.....2
ITON 1011.....Comparative Analysis of Microcomputer Operating Systems.....2

18

Second Semester:

ENGL 1121 .....English Composition II - Technical Focus 3
ITON 1747.....Red Hat Academy System Administration I 3
Choose course(s) from the Arts and Humanities Electives list. 3
(1st 8 weeks)
CNET 1300 .....Cisco Networking Technology III 2
ITON 2050.....Windows 7 Configuration.....2
OR
ITON 2060.....Configuring Windows 8
(2nd 8 weeks)
CNET 1400 .....Cisco Networking Technology IV.....2
ITON 2240.....Installing and Configuring Windows Server 2012 2

17

Third Semester:

CNET 2720 .....Cisco Network Security I: Managing Security.....3
ITIS 1355 .....Security+ and Security Essentials 3
MATH 1650.....College Algebra 4
(1st 8 weeks)
ITON 2241.....Administering Windows Server 2012..... 2
(2nd 8 weeks)
ITON 2242.....Configuring Advanced Windows Server 2012 Services.....2

14

Fourth Semester:

ITIS 2355 .....Security Investigation and Penetration Studies 3
ITON 2767.....Red Hat Academy System Administration III 3
MATH 1550.....Statistics 4
PHYS 1610 .....General Physics I 5

15
Program Total: 64

**Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

***English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Cisco Network Infrastructure Concentration (9428)

NOTE: *CPET 1050 has a prerequisite of prior exposure to applied technologies or successful completion of the CIM or ET Tech Prep programs. Students can take CIMN 0970 Introduction to Electrical Devices and Controls to gain the required knowledge and experience, if necessary. Students with prior experience should contact the Mathematics, Engineering Technologies, Natural & Social Sciences Office to schedule the proficiency exam for CIMN 0970.*

First Semester:

ENGL 1110* .....English Composition I (A).....3
OR
ENGL 1111 .....English Composition I (B)
FYEX 1000.....First Year Experience.....1
MATH 1101.....Technical Mathematics I 4
PHYS 1100 .....Applied Physics I 3
(1st 8 weeks)
CNET 1100 .....Cisco Networking Technology I 2
ENGR 1000 .....Introduction to Engineering Technology 2
(2nd 8 weeks)
CNET 1200 .....Cisco Networking Technology II.....2

17

Second Semester:

CNET 1050 .....Voice and Data Cabling.....2
ENGL 1121 .....English Composition II - Technical Focus 3
MATH 1201.....Technical Mathematics II.....4
PHYS 1200 .....Applied Physics II.....3
(1st 8 weeks)
CNET 1300 .....Cisco Networking Technology III 2
(2nd 8 weeks)
CNET 1400 .....Cisco Networking Technology IV.....2

16

Third Semester:

CNET 2520 .....Cisco Networking V: Advanced Routing 3
COMM 1050**.....Fundamentals of Public Speaking.....2
OR
COMM 1150.....Fundamentals of Interpersonal Communication
CPET 1050.....Assembling, Upgrading and Repairing Personal Computers.....2
CPET 1120.....C Programming for Engineering Technology 3
ELEC 1120.....Direct Current Circuit Analysis 2
ITIS 1030 .....Security Awareness.....1
Choose course(s) from the Technical Electives list. 3

16

Fourth Semester:

CNET 2560 .....Cisco Networking Technology VII: Multi-layer Switching 3
CPET 2050.....Advanced Assembly and Repair of Personal Computers.....2
Choose course(s) from the Arts and Humanities Electives list. 3
Choose course(s) from the Social and Behavioral Sciences Electives list. 3
(1st 8 weeks)
CPET 1200.....Visual Basic for Engineering Technology I.....2
(2nd 8 weeks)
CPET 2200.....Visual Basic for Engineering Technology II 2

15
Program Total: 64

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

Technical Electives: minimum 3 credits

CNET 2720 .....Cisco Network Security I: Managing Security 3
ELEC 2821.....Programmable Logic Controllers.....3
ITIS 1355 .....Security+ and Security Essentials 3
ITON 1050 .....Using Microsoft Windows 7.....1
OR
ITON 1060.....Using Microsoft Windows 8.....1
OR
ITON 1011 .....Comparative Analysis of Microcomputer Operating Systems.....2
ITON 2050.....Windows 7 Configuration.....2
OR
ITON 2060.....Configuring Windows 8.....2

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Microsoft Network Infrastructure Concentration (9427)

First Semester:

ELEC 1120.....Direct Current Circuit Analysis 2
ENGL 1110* .....English Composition I (A).....3
OR
ENGL 1111 .....English Composition I (B)
FYEX 1000.....First Year Experience.....1
MATH 1101.....Technical Mathematics I 4
PHYS 1100 .....Applied Physics I 3
(1st 8 weeks)
ENGR 1000 .....Introduction to Engineering Technology 2
(2nd 8 weeks)
ITON 1050.....Using Microsoft Windows 7.....1
OR
ITON 1060.....Using Microsoft Windows 8
ITON 1205.....Network+ and Networking Essentials 2

18

Second Semester:

COMM 1050**.....Fundamentals of Public Speaking.....2
OR
COMM 1150.....Fundamentals of Interpersonal Communication
ELEC 1330.....Digital Systems Fundamentals.....2
ENGL 1121.....English Composition II - Technical Focus.....3
ITIS 1030.....Security Awareness.....1
PHYS 1200.....Applied Physics II.....3
(1st 8 weeks)
ITON 2050.....Windows 7 Configuration.....2
OR
ITON 2060.....Configuring Windows 8
(2nd 8 weeks)
ITON 2240.....Installing and Configuring Windows Server 2012.....2

15

Third Semester:

CPET 1120.....C Programming for Engineering Technology.....3
ITIS 1355.....Security+ and Security Essentials.....3
MATH 1201.....Technical Mathematics II.....4
(1st 8 weeks)
CNET 1100.....Cisco Networking Technology I.....2
ITON 2241.....Administering Windows Server 2012.....2
(2nd 8 weeks)
CNET 1200.....Cisco Networking Technology II.....2
ITON 2242.....Configuring Advanced Windows Server 2012 Services.....2

18

Fourth Semester:

CPET 1200.....Visual Basic for Engineering Technology I.....2
ELEC 2420.....Microcontroller Applications.....2
ELEC 2460.....Digital Systems and Microcontroller Laboratory.....1
Choose course(s) from the Arts and Humanities Electives list.....3
Choose course(s) from the Social and Behavioral Sciences Electives list.....3
(1st 8 weeks)
CNET 1300.....Cisco Networking Technology III.....2
(2nd 8 weeks)
CNET 1400.....Cisco Networking Technology IV.....2

15
Program Total: 66

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Network Infrastructure/Security Certificates

- Microsoft Networking (listed under Information Technology and Computer Science Certificates)
- Network Infrastructure Security Specialist

Network Infrastructure Security Certificate (4254)

CNET 1100	Cisco Networking Technology I	2
CNET 1200	Cisco Networking Technology II	2
CNET 1300	Cisco Networking Technology III	2
CNET 1400	Cisco Networking Technology IV	2
CNET 2720	Cisco Network Security I: Managing Security	3
ENGR 1000	Introduction to Engineering Technology	2
ITIS 1355	Security+ and Security Essentials	3
ITIS 2355	Security Investigation and Penetration Studies	3
ITON 1011	Comparative Analysis of Microcomputer Operating Systems	2
ITON 1747	Red Hat Academy System Administration I	3
ITON 2050	Windows 7 Configuration	2
OR		
ITON 2060	Configuring Windows 8	

Certificate Total: 26

Nuclear Engineering Technology (9416)

This program is based on the nuclear industry "Non-Licensed Operator" training requirements. Students must be "College Ready" (placement in MATH 1101 and ENGL 1110 or ENGL 1111) prior to registering for any NUET courses. A minimum GPA of 2.0 and a "C" grade or higher is required in all ELEC, MATH, CHEM, PHYS, NUET, and program-specific courses for graduation.

Graduates will be able to: (1) solve basic technical problems typical of what is encountered when working at a nuclear power plant; (2) perform tests and experiments, data analysis, and report findings including recommendations for improvement; (3) work and communicate effectively in diverse and multi-disciplinary teams; (4) be aware of modern professional, ethical, and societal issues as well as recognize the need for lifelong learning.

Students meeting specific academic standards are eligible to receive, upon graduation, a "Nuclear Uniform Curriculum" certificate issued by the Nuclear Energy Institute (NEI) and Lakeland.Before being hired to work within the nuclear industry, students must be able to pass a background check, drug tests, and psychological screening, typically administered by the utility.

Lakeland is one of only a handful of colleges nationwide to offer a two-year degree program in Nuclear Engineering Technology (9416) that is ETAC/ABET accredited. (ETAC/ABET-- Engineering Technology Accreditation Commission of the Accreditation Board of Engineering and Technology 415 N. Charles St. Baltimore, MD 21201, phone: 410.347.7700, www.abet.org.)

Students must meet specific admission requirements for this program. Interested students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II*

First Semester:

ENGL 1110*	English Composition I(A)	3
OR		
ENGL 1111	English Composition I(B)	
FYEX 1000	First Year Experience	1
MATH 1101	Technical Mathematics I	4
NUET 1000	Nuclear Industry Fundamentals Concepts	3
NUET 1100	Radiation Detection and Protection	3
PHYS 1100	Applied Physics I	3
		17

Second Semester:

CHEM 1100**	Elementary Chemistry	4
OR		
CHEM 1500	General Chemistry I	
ELEC 1120	Direct Current Circuit Analysis	2
ENGR 1000	Introduction to Engineering Technology	2
MATH 1201	Technical Mathematics II	4
NUET 1200	Plant Drawings	3
NUET 1300	Power Plant Components	3
		18

Third Semester:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
ELEC 1220	Alternating Current Circuit Analysis	2
ELEC 1260	Direct Current and Alternating Current Laboratory	1
NUET 2000	Reactor Plant Materials	3
NUET 2250	Reactor Theory, Safety and Design	3
PHYS 1200	Applied Physics II	3
		15

Fourth Semester:

ECON 1150	Basic Economics	3
OR		
ECON 2500	Principles of Macroeconomics	
OR		
ECON 2600	Principles of Microeconomics	
ELEC 2300	Sensors, Actuators, and Control	3
HUMX 1100	Introduction to Humanities	3
NUET 2300	Thermo-Fluid Sciences	4
NUET 2400	Capstone and Case Studies in Nuclear Engineering Technology	2
		15

Program Total: 65

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

**Chemistry course selection is based on prior chemistry experience.

Criminal Justice - Corrections (9630)

The Corrections degree program introduces pre-service students to careers in corrections and equips students with both the skills and knowledge needed to pursue careers and/or additional education. Positions are available in federal, state, local, and private institutions as well as in community-based programs. Employment activities range from custody and control to responsibility for assisting in treatment and prevention programs.

The program is also intended to support the continued professional growth of in-service correctional practitioners through the enhancement of general skills and knowledge related to the correctional field. Therefore, credit may be granted for in-service practitioners who present proof of having completed advanced corrections-related training, educational programs and/or the Corrections Academy of the Ohio Department of Rehabilitation and Corrections. Students seeking credit for experience should contact a criminal justice specialist in the Counseling Office.

Legislative mandates also govern admission requirements for employment in the corrections field. These mandates include, but are not limited to, maintenance of both good moral character and a clean adult and juvenile criminal record.

Lakeland graduates may, through transfer and partnership agreements with local four-year colleges, choose to continue their formal education toward positions in probation and parole systems, and advanced positions in a correctional agency, institution or community-based correctional facility. Students planning to transfer to a four-year college should meet with a criminal justice specialist in the Counseling Office to facilitate the transfer process.

First Semester:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
CRMJ 1110	Introduction to Criminal Justice	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
HUMX 1100	Introduction to Humanities	3
SOCY 1150	Principles of Sociology	3
		16

Second Semester:

CRMJ 1211**	Community Corrections	3
CRMJ 2244	Criminology	3
ENGL 1120	English Composition II	3
PSYC 1500	Introduction to Psychology	3
Choose any Mathematics course from MATH 1550 or higher		3
		15

Third Semester:

CRMJ 2210	Ethics in Criminal Justice	3
CRMJ 2212	Criminal Law	3
CRMJ 2260	Interview and Interrogation	3
POLS 1300	U.S. National Government	3
Choose course(s) from the Technical Electives list		3
		15

Fourth Semester:

CRMJ 2216	Criminal Procedure	3
CRMJ 2219	Correctional Practices and Challenges	3
CRMJ 2231	Juvenile Delinquency	3
CRMJ 2250	Current Issues in Criminal Justice	3
Choose any Transfer Module course(s) as a general elective.		3
		15

Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 3 credits

CRMJ 1130	Crisis Intervention	3
CRMJ 1230	Introduction to Criminal Investigation	3
CRMJ 2213	Criminal Investigation	3
CRMJ 2239**	Criminal Justice Internship	3
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
PEHR 1650	Health Fitness	2
PSYC 2400	Child Psychology	3
PSYC 2500	Adolescent Psychology	3
PSYC 2700	Introduction to Psychopathology	3
SOCY 1190	Chemical Dependency and Society	3

***Credit for CRMJ 1211, CRMJ 2239, and three (3) technical elective credits may be granted to persons who present proof of having completed the Corrections Officer Academy of the Ohio Department of Rehabilitation and Corrections.*

Criminal Justice - Law Enforcement (9620)

The Law Enforcement degree program introduces pre-service students to careers in law enforcement and equips students with both the skills and knowledge needed to pursue careers and/or additional education. Positions are available in federal, state, local, and private law enforcement agencies as well as in community-based victim, witness, diversion, and crime prevention programs.

The program is also intended to support the continued professional growth of in-service law enforcement practitioners through the enhancement of general skills and knowledge related to the law enforcement field. Therefore, credit may be granted for in-service practitioners who present proof of having completed advanced law enforcement-related training, educational programs and/or the Basic Police Academy of the Ohio Peace Officer Training Academy for the Ohio Peace Officer Training Council. Students seeking credit for experience should contact a criminal justice specialist in the Counseling Office.

Legislative mandates also govern admission requirements for employment in the law enforcement field. These mandates include, but are not limited to, completion of an Ohio Basic Police Training Academy prior to working as a police officer, and maintenance of both good moral character and a clean adult and juvenile criminal record.

Lakeland graduates may, through transfer agreements with local four-year colleges, choose to continue their formal education toward positions at the federal and state levels. Students planning to transfer to a four-year college should meet with a criminal justice specialist in the Counseling Office to facilitate the transfer process.

First Semester:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
CRMJ 1110	Introduction to Criminal Justice	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
HUMX 1100	Introduction to Humanities	3
SOCY 1150	Principles of Sociology	3
		16

Second Semester:

CRMJ 1117**	Community Policing	3
CRMJ 2244	Criminology	3
ENGL 1120	English Composition II	3
PSYC 1500	Introduction to Psychology	3
Choose any Mathematics course from MATH 1550 or higher		3
		15

Third Semester:

CRMJ 2210	Ethics in Criminal Justice	3
CRMJ 2212**	Criminal Law	3
CRMJ 2260	Interview and Interrogation	3
POLS 1300	U.S. National Government	3
OR		
POLS 2100	State and Local Government	
Choose course(s) from the Technical Electives list.		3
		15

Fourth Semester:

CRMJ 2216**	Criminal Procedure	3
CRMJ 2231	Juvenile Delinquency	3
CRMJ 2250	Current Issues in Criminal Justice	3
Choose course(s) from the Technical Electives list.		6
		15
		Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 9 credits

CRMJ 1130	Crisis Intervention	3
CRMJ 1211	Community Corrections	3
CRMJ 1230	Introduction to Criminal Investigation	3
CRMJ 2213**	Criminal Investigation	3
CRMJ 2214**	Patrol Operations	3
CRMJ 2219	Correctional Practices and Challenges	3
CRMJ 2239	Criminal Justice Internship	3
EMGT 1000	Introduction to Emergency Management	3
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3
PEHR 1650	Health Fitness	2
PSYC 2400	Child Psychology	3
PSYC 2500	Adolescent Psychology	3
PSYC 2700	Introduction to Psychopathology	3
SOCY 1190	Chemical Dependency and Society	3

***Credit for CRMJ 1117, CRMJ 2212, CRMJ 2213, CRMJ 2214, CRMJ 2216, and three (3) elective credits may be granted to persons who present proof of having completed the Basic Police Academy of the Ohio Peace Officer Training Council.*

Early Childhood Education (9610)

Lakeland Community College's Early Childhood Education Program prepares students for positions in a variety of educational environments including child care centers, preschools, prekindergarten programs, and Head Start classrooms. The program also provides students with the skills for employment as family child care providers and to work with children with special needs.

The Early Childhood Education Program is approved by Ohio Department of Education for Prekindergarten Associate Teacher Licensure. Students will either enroll in (1) the Associate of Applied Science Degree in Early Childhood Education track OR (2) the degree and Prekindergarten Licensure track when specific requirements have been met. These requirements for the licensure track include students taking Praxis PPST & Core Academic Skills for Educators and obtaining the following qualifying scores: Core Reading Test Code 5712/Passing Score 156; Core Writing Test Code 5722/Passing Score 162; Core Math Test Code 5732/Passing Score 150. Upon completion of the degree, students having met all eligibility requirements (including pass scores on Praxis PPST Core Exams) will be advised to take the Ohio Assessments for Educators test - Prekindergarten (Sub Tests I & II) and must earn a passing score as determined by Ohio Department of Education in order to be recommended for licensure.

The Early Childhood Education Program provides a theoretical background in child development, experience in personal interaction, field experience in practicum, and student teaching totaling more than 300 hours of practical on-the-job experience.

Lakeland's Teaching/Learning Center (TLC), a fully licensed and nationally accredited program by the National Association for the Education of Young Children and an Ohio Step Up to Quality program serving children ages 16 months through 5 years of age, is an onsite state-of-the-art laboratory school for the Early Childhood Education Program.

Legislative mandates govern specialized admission requirements and performance objectives for this program. These include state laws requiring that any person obtaining or maintaining a teaching license be and remain a person of good moral character.

All students must comply with Lakeland Community College's Early Childhood Education Fingerprinting Policy, which meets State Law requirements for Ohio Department of Jobs and Family Services and Ohio Department of Education. Students enrolled in the Early Childhood Education Program must complete BCII and FBI criminal background checks prior to engaging in any fieldwork experiences and in accordance with the Department Policy. Completion of this process is the responsibility of the student. Complete details about program requirements are stated in the Early Childhood Education Program Handbook. Contact the Early Childhood Education Department for more information. Interested students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

First Semester:

COMM 1000	Effective Public Speaking	3
ECED 1130	Introduction to Early Childhood Education	4
EDUC 2300	Educational Technology	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
PSYC 1500	Introduction to Psychology	3
		17

Second Semester:

ARTS 1120	Art Appreciation	3
ECED 1650	The Developing Child	3
ECED 1800	Early Childhood Foundations of Learning	4
ENGL 1120	English Composition II	3
Choose any Mathematics course from MATH 1550 or higher**		3
		16

Third Semester:

ECED 2110	Working with Families	3
ECED 2140	Early Childhood Curriculum - Integrated Learning	3
ECED 2150	Language and Literacy Experiences	4
EDUC 2180	Practicum in the Educational Setting	2
Choose course(s) from the general electives.***		5
		17

Fourth Semester:

BIOL 1140	Human Biology	3
ECED 2120	Music and Movement in Early Childhood Education	3
ECED 2800****	Student Teaching Practicum and Seminar	4
EDUC 2031	Introduction to Individuals with Exceptionalities	3
		13

Program Total: 63

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***It is recommended that students complete MATH 1600.*

****Students who take a Mathematics course with more than 3 credits and/or a Natural Science course with more than 3 credits as part of the program requirements can apply the additional credit(s) to the general elective credits.*

*****It is recommended that all core ECED/EDUC courses be completed prior to taking ECED 2800.*

The following courses are part of the Transfer Assurance Guide (TAG) which has been established to provide transferability and application of credit between institutions of higher education in Ohio:

EDUC 1150 Introduction to Education as a Profession
EDUC 2300 Educational Technology
EDUC 2031 Introduction to Individuals with Exceptionalities
ECED 2110 Working with Families
ECED 1650 The Developing Child
PSYC 2200 Educational Psychology

Emergency Management Planning and Administration (9670)

The magnitude of natural disasters, terrorist incidents, and other major emergencies has increased the public awareness of the importance of effective Emergency Management. Rapid growth and complexity in this field have created a critical need for a new degree option for those involved in this important career area.

The Emergency Management Planning and Administration program is a comprehensive all-hazards program with a goal of reducing the public vulnerability to disasters and other major events. The program is designed to address the four major umbrella areas of Emergency management, which are mitigation, preparation, response, and recovery.

All core Emergency Management courses are scheduled for online delivery, which is available 24 hours a day, 7 days a week. Students living a distance from Lakeland may take the Emergency Management courses online, complete other courses such as English and Social Science at a college closer to home, and still receive their Emergency Management degree from Lakeland Community College.

The intended audience for the core/major courses includes the following:

- County and State Emergency Management Agency administrators and their staff
- State, County, and Local administrators with emergency planning responsibilities
- American Red Cross and other community agency administrators, staff, and volunteers
- Emergency Management personnel employed in Business, Industry, and Public Utilities
- Building, Planning, Engineering, Zoning, and Floodplain Management Professionals
- Environmental and Public Health Officials and their staff
- Transportation Department and Public Works personnel
- Active and Reserve military personnel involved in Emergency Management
- Other Public Safety Personnel with Emergency Management planning responsibilities
- Environmental, Natural Resources, and Forestry Professionals
- Risk Management Professionals and healthcare professionals with emergency management responsibilities.
- Pre-service students who aspire to become an Emergency Management professional.

For details call the program director at 440.525.7252.

A certificate is also available.

NOTE: *Many Emergency Management (EMGT) courses are scheduled on an alternating basis, therefore, not all EMGT courses are offered every academic year. Contact the Counseling Office or Program Director for scheduling details and advice.*

Distance learning students should consult an academic counselor regarding possible course substitutions for CHEM 1050 and PHOT 1100/PHOT 1105.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to or as part of the following requirements.*

First Semester:

CHEM 1050 ..... Chemistry in the Everyday World 3
OR
PSCI 1400 ..... Introduction to Meteorology
EMGT 1000 ..... Introduction to Emergency Management 3
EMGT 1120 ..... Emergency Management Administration and Policy 2
EMGT 1140 ..... Incident Command System 2
ENGL 1110* ..... English Composition I (A) 3
OR
ENGL 1111 ..... English Composition I (B)
FYEX 1000 ..... First Year Experience 1
Choose any course(s) from the Mathematics Electives list** 3

17

Second Semester:

EMGT 1220	Emergency Planning	2
EMGT 1240	Developing Volunteer Resources	2
EMGT 1260	Mitigation for Emergency Managers	2
EMGT 1280	Emergency Operations Center Management and Operation	2
POLS 2100	State and Local Government	3
Choose course(s) from the Natural and Physical Science Electives list.**		3
		14

Third Semester:

COMM 1050***	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
EMGT 1350	Public Sector Community Relations and Customer Service	2
EMGT 2160	Exercise Design and Evaluation	3
EMGT 2210	Public Sector Supervision and Leadership	2
EMGT 2380	Continuity of Operations	2
Choose courses(s) from the Social and Behavioral Science Electives list.		3
Choose course(s) from the Technical Electives list.		3
		17

Fourth Semester:

EMGT 2340	Hazardous Materials Operations and Command	3
EMGT 2390	Emergency Management Field Service Seminar	2
OR		
EMGT 2490	Emergency Management Problem Analysis	
EMGT 2360	Disaster Response and Recovery	3
PHOT 1100	Basic Photography	3
OR		
PHOT 1105	Basic Photography - Digital	
OR		
Choose course(s) from the Arts and Humanities Electives list.		
Choose course(s) from general electives.		3
		14
		Program Total: 62

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math and/or science as advised by their counselor.*

****Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

Technical Electives: minimum 3 credits

BUSM 1800	Essentials of Management and Supervision	3
BUSM 2350	Labor-Management Relations	3
BUSM 2380	Training Skills and Techniques	3
CRMJ 1110	Introduction to Criminal Justice	3
EMGT 1700	Emergency Response to Terrorism: Basic Concepts	1
EMGT 1800	Emergency Management Guided Study	1
FIRE 1100	Introduction to Fire and Emergency Services	3
FIRE 1170	Fire Protection and Detection Systems	2
FIRE 1290	Building Construction for Fire and Life Safety	3
FIRE 2330	Combustion Process and Fire Behavior	2
FIRE 2380	Emergency Services Safety and Survival	2
PHOT 2100	Forensic Photography	3
PHOT 2200	Surveillance Photography	2

Mathematics Electives: minimum 3 credits

MATH 1330	Statistics for the Health Sciences	3
MATH 1600	Survey of College Mathematics	3
MATH 1650	College Algebra	4
MATH 2130	Business Statistics I	3
PHIL 2600	Logic	3

Other courses as approved in advance by the program director

Natural and Physical Science Electives: minimum 3 credits

CHEM 1050	Chemistry in the Everyday World	3
CHEM 1100	Elementary Chemistry	4
GEOL 1100	Introduction to Physical Geology	4
GEOL 1200	Introductory Historical Geology	4
PHYS 1500	Astronomy	4
PSCI 1100	Conceptual Physical Science	4
PSCI 1300	Earth Science	3
PSCI 1400	Introduction to Meteorology	3

Other courses as approved in advance by the program director.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Emergency Management Planning and Administration Certificate (6701)

EMGT 1000	Introduction to Emergency Management	3
EMGT 1120	Emergency Management Administration and Policy	3
EMGT 1140	Incident Command Center	2
EMGT 1220	Emergency Planning	2
EMGT 1240	Developing Volunteer Resources	2
EMGT 1260	Mitigation for Emergency Managers	2
EMGT 1280	Emergency Operations Center Management and Operation	2
EMGT 1350	Public Sector Community Relations and Customer Service	2
EMGT 2160	Exercise Design and Evaluation	3
EMGT 2210	Public Sector Supervision and Leadership	2
EMGT 2340	Hazardous Materials Operations and Command	3
EMGT 2360	Disaster Response and Recovery	3

Certificate Total: 28

Fire Science Technology (9640)

Fire service specialists are sought by fire departments nationwide, as well as by insurance companies, industrial organizations, government agencies, and businesses dealing with fire protection and equipment.

Lakeland's Fire Science Technology program meets the needs of today's career and volunteer firefighters, pre-service students, and business and industry personnel having an interest in fire safety and protection. Fire science courses reflect the philosophies and techniques of today's fire service leaders.

A certificate is also available.

NOTE: *This program is designed for both in-service and pre-service students.*

Pre-service students must take FIRE 2390

In-service students must take FIRE 2490

NOTE: *Many Fire Science Technology (FIRE) courses are scheduled on an alternating basis, therefore, not all FIRE courses are offered every academic year. Contact the Counseling Office or Fire Science Program Director for scheduling details and advice.*

Distance learning students only should consult an academic counselor regarding possible course substitutions for CHEM 1050 and PHOT 1100/PHOT 1105.

Prior to course selections, students who may transfer to another college upon completing their Lakeland degree should consult an academic counselor regarding transfer courses that are part of the Ohio (Fire Science) Transfer Assurance Guide.

NOTE: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to or as part of the following requirements.*

First Semester:

CHEM 1050	Chemistry in the Everyday World	3
OR		
PSCI 1400	Introduction to Meteorology	
FIRE 1100	Introduction to Fire and Emergency Services	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FIRE 1260	Fire Prevention Practice	3
FIRE 1350	Public Sector Community Relations and Customer Service	2
FYEX 1000	First Year Experience	1
Choose any course(s) from the Mathematics Electives list**		3
		18

Second Semester:

FIRE 1120	Fire Organization and Administration	2
FIRE 1290	Building Construction for Fire and Life Safety	3
FIRE 2330	Combustion Processes and Fire Behavior	2
POLS 2100	State and Local Government	3
Choose course(s) from the Natural and Physical Science Electives list.**		3
Choose course(s) from the Technical Electives list.		2
		15

Third Semester:

COMM 1050***	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
FIRE 1170	Fire Protection and Detection Systems	2
FIRE 2205	Fire Service Hydraulics	2
FIRE 2210	Public Sector Supervision and Leadership	2
FIRE 2280	Fireground Strategy and Tactics	3
Choose courses(s) from the Social and Behavioral Science Electives list.		3
Choose course(s) from the Technical Electives list.		3
		17

Fourth Semester:

FIRE 2200 .....Fire Investigation Methods 3
FIRE 2340 .....Hazardous Materials Operations and Command.....3
FIRE 2390 .....Fire Field Service Seminar.....2
OR
FIRE 2490 .....Fire Service Problem Analysis and Solution
FIRE 2380 .....Emergency Services Safety and Survival.....2
PHOT 1100 .....Basic Photography 3
OR
PHOT 1105 .....Basic Photography ' Digital
OR
Choose course(s) from the Arts and Humanities Electives list.
Choose course(s) from general electives.....3

16
Program Total: 66

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math and/or science as advised by their counselor.*

****Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

Technical Electives: minimum 5 credits

BUSM 2380.....Training Skills and Techniques 3
EMGT 1000.....Introduction to Emergency Management 3
EMTS 1010 .....Emergency Medical Technician-Basic.....7
OR
EMTS 1050 .....Emergency Medical Technician-Refresher 2
EMTS 2011 .....Paramedic Beginner.....12
EMTS 2021 .....Paramedic Intermediate A 4
EMTS 2031 .....Paramedic Intermediate B 4
EMTS 2041 .....Paramedic Advanced 4
FIRE 1150 .....Firefighter Orientation.....1
FIRE 1340 .....Hazardous Materials for First Responders.....1
FIRE 1800 .....Fire Science Guided Study 1-4
FIRE 2150 .....Advanced Firefighter 3
PHOT 2100.....Forensic Photography 3
PHOT 2200.....Surveillance Photography 2

Mathematics Electives: minimum 3 credits

MATH 1330.....Statistics for the Health Sciences.....3
MATH 1600.....Survey of College Mathematics 3
MATH 1650.....College Algebra 4
MATH 2130.....Business Statistics I 3
PHIL 2600 .....Logic 3
Other courses as approved in advance by the program director

Natural and Physical Science Electives: minimum 3 credits

CHEM 1050.....Chemistry in the Everyday World.....3
CHEM 1100.....Elementary Chemistry.....4
GEOL 1100 .....Introduction to Physical Geology 4
GEOL 1200 .....Introductory Historical Geology.....4
PHYS 1500 .....Astronomy.....4
PSCI 1100 .....Conceptual Physical Science.....4
PSCI 1300 .....Earth Science 3
PSCI 1400 .....Introduction to Meteorology 3
Other courses as approved in advance by the program director.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Fire Science Technology Certificate (6401)

NOTE: *This program is designed for both in-service and pre-service students.*

FIRE 1100	Introduction to Fire and Emergency Services	3
FIRE 1120	Fire Organization and Administration	2
FIRE 1170	Fire Protection and Detection Systems	2
FIRE 1260	Fire Prevention Practice	3
FIRE 1290	Building Construction for Fire and Life Safety	3
FIRE 1350	Public Sector Community Relations and Customer Service	2
FIRE 2200	Fire Investigation Methods	3
FIRE 2205	Fire Service Hydraulics	2
FIRE 2210	Public Sector Supervision and Leadership	2
FIRE 2280	Fireground Strategy and Tactics	3
FIRE 2330	Combustion Processes and Fire Behavior	2
FIRE 2340	Hazardous Materials Operations and Command	3

Certificate Total: 30

Applied Studies - Education, Human and Public Services

Human Services (9660)

Human service workers assist and support people facing problems in living that may include poverty, homelessness, mental illness, drug abuse, domestic violence, physical illness, disability, or life transitions. They are employed in a variety of settings such as community service agencies, group homes, shelters and rehabilitation programs. Human service workers can have a variety of job titles including case manager, social work assistant, victim advocate, or behavior management specialist.

Job prospects for those with an associate degree in Human Services are excellent. According to the U.S. Department of Labor, opportunities for human service workers are expected to grow 34 percent through 2016.

The Lakeland Human Services program is designed to prepare students for entry-level paraprofessional and technical positions in a wide variety of human service agencies serving a diverse range of clients. The program also provides a firm basis for the continued professional growth of individuals already in such positions. Educational experiences are tailored to enhance critical thinking and professionalism, while mastering evidence-based practice and career skills as well as increasing knowledge related to human behavior in the social environment.

Coursework can be completed on a full-time or part-time basis with day and evening sections available. The curriculum is structured to provide students the opportunity to earn educational certificates in Case Management and Chemical Dependency Counseling on their way to the associate degree. A Pre-Social Work certificate is also available that includes the additional coursework required for admission to the Bachelor of Social Work program through our partnership with Youngstown State University at the Holden University Center.

The semester preceding graduation from the associate degree program, students must complete a 210 hour internship experience at an approved agency and within the scope of practice for a Social Worker Assistant in the State of Ohio. Securing an internship site is not guaranteed as it is dependent upon agency acceptance. Agency acceptance is dependent on your academic record, criminal record, and your interview performance in addition to agency needs at the time of application for internship.

Upon completion of the Associate of Applied Science in Human Services, graduates are eligible to apply for the "Social Worker Assistant" designation with the State of Ohio subject to any additional requirements stated in Chapter 4757 of the Ohio Revised Code. Upon completion of HMSV 2230, students are eligible to apply for the "Chemical Dependency Counselor Assistant" designation with the State of Ohio subject to any additional requirements stated in Chapter 4758 of the Ohio Revised Code.

Human service students may also choose to continue their studies at the bachelor level by enrolling in our partnership program with Youngstown State University. Two-thirds of the 124 needed credits are offered by Lakeland at Lakeland tuition rates. The remaining intensive social work credits are offered by Youngstown State University and are held at the Holden University Center across the street from Lakeland's main campus. Students may transfer either the Associate of Applied Science in Human Services or an Associate of Arts degree. Those with an Associate of Arts can take a concentration of Lakeland's Human Service courses while completing their Bachelor of Social Work in the Youngstown partnership program.

Students enrolled in the Human Services program must complete BCI and FBI criminal background checks at the student's expense prior to engaging in any fieldwork experience. Please be aware that having been convicted of certain criminal offenses may prevent you from working with specific populations or being certified in this field. It is strongly recommended that you consult with the appropriate state licensing board before embarking on a course of study in this field. In addition, there may be federal requirements or internal agency policies that may prevent an agency from hiring someone with a criminal record.

Certificates are also available.

First Semester:

COMM 1100	Effective Interpersonal Communication	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
HMSV 1115	Introduction to Human Services	3
HMSV 1215	Dealing with Diversity	3
PHIL 1300	Thinking Critically	3
		16

Second Semester:

ENGL 1120	English Composition II	3
HMSV 1118	Principles of Case Management	3
HMSV 1120	Fundamentals of the Helping Process	3
SOCY 1150	Principles of Sociology	3
SOCY 1190	Chemical Dependency and Society	3
		15

Summer Semester:

POLS 1300	U.S. National Government	3
PSYC 1500	Introduction to Psychology	3
		6

Third Semester:

BIOL 1140	Human Biology	3
HMSV 2200	Motivational Interviewing	3
HMSV 2230	Fundamentals of Addiction Counseling	3
HMSV 2284	Human Services Internship Preparation	2
SOCY 2250	Introduction to Social Work	3
		14

Fourth Semester:

HMSV 2116	Social Welfare	3
HMSV 2285	Human Services Internship and Seminar	3
MATH 1330 or higher**		3
PHIL 2700	Ethics	3
		12

Program Total: 63

**English course selection is based on placement test results (English 1111 is 4 credits, only 3 credits apply to degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Case Management Certificate (3262)

This certificate is designed to prepare students for employment as a case manager at a social service agency. It also fulfills one of the steps for completion of the Human Services degree.

COMM 1100	Effective Interpersonal Communication	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
HMSV 1115	Introduction to Human Services	3
HMSV 1118	Principles of Case Management	3
HMSV 1120	Fundamentals of the Helping Process	3
PHIL 1300	Thinking Critically	3

Certificate Total: 18

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Chemical Dependency Certificate (3263)

This certificate is designed to prepare students for employment as a Chemical Dependency Counselor Assistant. It also fulfills one of the steps for completion of the Human Services degree.

Successful completion of HMSV 2230 Addictions Counseling with a "C" or better qualifies students to apply to the State of Ohio for a Chemical Dependency Counselor Assistant designation.

Completion of Case Management Certificate		18
HMSV 2200	Motivational Interviewing	3
HMSV 2230	Fundamentals of Addiction Counseling	3
SOCY 1190	Chemical Dependency and Society	3

Certificate Total: 27

Pre-Social Work Bridge Certificate (3264)

This certificate is designed to prepare students for transfer to the Youngstown State University baccalaureate degree in Human Services. It builds upon the core requirements included in both the Lakeland Community College Human Services associate degree program and the Youngstown State University baccalaureate degree transfer program.

Core requirements:

BIOL 1140	Human Biology	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGL 1120	English Composition II	3
HMSV 1115	Introduction to Human Services	3
HMSV 1120	Fundamentals of the Helping Process	3
HMSV 2116	Social Welfare	3
MATH 1330	Statistics for the Health Sciences	3
OR		
MATH 1550	Statistics	4
PHIL 1300	Thinking Critically	3
PHIL 2700	Ethics	3
POLS 1300	U.S. National Government	3
PSYC 1500	Introduction to Psychology	3
SOCY 1150	Principles of Sociology	3
SOCY 2250	Introduction to Social Work	3

Core Requirements Total: 39-40

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Certificate requirements:

ANTH 1160	Introduction to Cultural Anthropology	3
COMM 1100	Effective Interpersonal Communication	3
MATH 1600	Survey of College Mathematics	3
PHIL 2000	Comparative Religion	3
SOCY 1190	Chemical Dependency and Society	3
OR		
HMSV 1132	Introduction to Developmental Disabilities	2
OR		
SOCY 2270	Sociology of Aging	3
Choose course(s) from the Natural Sciences Electives list.		3-4
Choose course(s) from the Social & Personal Awareness Electives list.		2-4
Choose course(s) from the Additional Electives list.		17

Certificate Total: 36-40

Natural Science Electives: minimum 3-4 credits

BIOL 1150	Plant Biology	4
BIOL 1160	Animal Biology	4
BIOL 1170	Ecology and Environmental Biology	4
BIOL 1180	Tropical Biology	4
BIOL 1190	Introduction to Evolutionary Biology	4
BIOL 1510	Principles of Biology I	4
BIOL 1520	Principles of Biology II	4
CHEM 1050	Chemistry in the Everyday World	3
CHEM 1100	Elementary Chemistry	4
GEOL 1100	Introduction to Physical Geology	4
GEOL 1200	Introductory Historical Geology	4
PSCI 1100	Conceptual Physical Science	4
PSCI 1400	Introduction to Meteorology	3

Social and Personal Awareness Electives: minimum 2-4 credits

ARTS 2230	Survey of Art II	3
ARTS 2240	Survey of Art III	3
BIOL 1030	Environmental Issues and Solutions	3
BIOL 1170	Ecology and Environmental Biology	4
ENGL 2235	Contemporary Global Fiction	3
ENGL 2248	Literature by Women	3
ENGL 2260	Survey of American Literature II	3
ENGL 2270	Literature of Contemporary Global Conflict	3
ENGL 2275	Multicultural Literary Studies	3
GEOG 1500	Introduction to Geography	3
GEOG 1600	World Regional Geography	3
GEOG 2000	Economic Geography	3
GEOG 2500	World Cultural Geography	3
HIST 2250	U.S. History: Reconstruction to the Present	3
HIST 2450	Women in U.S. History	2
HIST 2500	World History Since 1945	3
HLTH 1300	Nutrition and Family Health	2
MUSC 1200	Music Appreciation	3
MUSC 1215	World Music	3
PEHR 1750	Personal Health	3
POLS 2200	Introduction to International Relations	3
POLS 2300	Introduction to Comparative Politics	3
POLS 2400	Women and Politics	3
PSYC 1400	Human Sexuality	3
PSYC 1700	Psychology of Gender	3
PSYC 2100	Lifespan Development for Nursing	3
PSYC 2700	Introduction to Psychopathology	3
PSYC 2750	Psychopathology of Childhood	3
SOCY 1170	Sociology of the Family	3
SOCY 1190	Chemical Dependency and Society	3

Additional Electives: minimum 17 credits

CRMJ 1130	Crisis Intervention	3
HMSV 1118	Principles of Case Management	3
HMSV 1132	Introduction to Developmental Disabilities	3
HMSV 2200	Motivational Interviewing	3
HMSV 2230	Fundamentals of Addiction Counseling	3
ITIS 1005	Computers and Information Processing	3
PSYC 2600	Adult Development and Aging	3
SOCY 1170	Sociology of the Family	3
SOCY 1180	Social Problems	3
SOCY 1190	Chemical Dependency and Society	3
SOCY 2270	Sociology of Aging	3

Biotechnology Science (9375)

The Biotechnology Science program prepares students for entry-level laboratory technician positions in research and industrial laboratories engaged in biotechnology. Graduates may choose career paths in medical, pharmaceutical, agricultural, environmental, or forensic science industries, as well as basic biological research. The program emphasizes hands-on training utilizing industry standard equipment to perform both routine and specialized experimental techniques. Students become adept in macromolecular separation and characterization, genetic manipulation, cell culture, and microbial growth control. Fundamental laboratory skills such as documentation, reagent preparation, safety, troubleshooting, good laboratory practice (GLP), and good manufacturing practice (GMP) are stressed.

A minimum GPA of 2.0 and a "C" grade or higher is required in all science and program-specific courses for graduation.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Biotechnology Science Program:

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Meet with the Biotechnology Science program director to obtain a program application form.
- Meet with a counselor to review program prerequisites and requirements.
- Completion of high school chemistry with a grade of "C" or above or successful completion of CHEM 1100 Elementary Chemistry.
- Successful completion of MATH 0950 Intermediate Algebra or placement into MATH 1650 College Algebra.

A certificate is also available.

First Semester:

BIOS 1050	Introduction to Biotechnology Science	3
BIOS 1200	Biotechnology Science Lab Skills	5
BIOL 1510	Principles of Biology I	4
CHEM 1500	General Chemistry I	5
FYEX 1000	First Year Experience	1
		18

Second Semester:

BIOS 1500	Introduction to Biochemistry	4
BIOL 2700	Microbiology	4
CHEM 1600	General Chemistry II	5
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
		16

Summer:

BIOS 1600	Advanced Molecular Separations	4
BIOS 2100	Applied Microbiology	3
		7

Third Semester:

BIOS 2500	Recombinant DNA Technology	4
BIOS 2600	Bioscience Manufacturing Processes	5
MATH 1550	Statistics	4
Choose course(s) from the Social and Behavioral Science Electives list.		3
		16

Fourth Semester:

BIOS 2550	Introduction to Bioinformatics	1
BIOS 2800	Biotechnology Science Seminar	1
COMM 1050**	Fundamentals of Public Speaking	2
(1st 8 weeks):		
BIOS 2400	Tissue Culture	3
(2nd 8 weeks):		
BIOS 2700	Internship	5
		12

Program Total: 69

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree). Students who place into ENGL 1111 should consult with the program chair.*

***Students may substitute COMM 1000. This 3 credit hour course may be required for students transferring to a four-year college.*

Social and Behavioral Sciences Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Biotechnology Science Certificate (3751)

This certificate is designed primarily for students with a baccalaureate or associate degree, and a basic science background including one year of college chemistry, cell biology, and general microbiology.

Admission to the Biotechnology Science program is required.

NOTE: *BIOS 1500 has prerequisites that include BIOL 1510 Principles of Biology I or an equivalent cellular biology course, and CHEM 1500 General Chemistry I or an equivalent chemistry course. BIOS 2100 has prerequisites that include BIOL 2700 Microbiology or an equivalent general microbiology course. Students may need to take additional courses if they have not already taken the prerequisite courses or their equivalent.*

BIOS 1050	Introduction to Biotechnology Science	3
BIOS 1200	Biotechnology Science Lab Skills	5
BIOS 1500	Introduction to Biochemistry	4
BIOS 1600	Advanced Molecular Separations	4
BIOS 2100	Applied Microbiology	3
BIOS 2400	Tissue Culture	3
BIOS 2500	Recombinant DNA Technology	4
BIOS 2550	Introduction to Bioinformatics	1
BIOS 2600	Bioscience Manufacturing Processes	5
BIOS 2700	Internship	5
BIOS 2800	Biotechnology Science Seminar	1

Certificate Total: 38

Dental Hygiene (9310)

The dental hygienist is a licensed member of the dental health team dedicated to helping patients maintain good oral health and prevent diseases and disorders. The dental hygienist is highly skilled in providing direct patient care and preventive procedures. Most dental hygienists are employed in private practice dental offices. However, hygienists are involved increasingly in other areas of preventive dentistry such as dental health education, community health, and public dental health.

The dental hygiene program is accredited by the Commission on Dental Accreditation of the American Dental Association. Upon satisfactory completion of the Dental Hygiene National Board Examination, North East Regional Board Examination, and the Ohio Laws Test, graduates are eligible to apply for an Ohio Dental Hygiene License. Fingerprinting and a background check is a component of the application for licensure. Any student who has been convicted of a felony or a misdemeanor related to substance abuse, or crime involving moral turpitude, may be denied licensure by the Ohio State Dental Board. Students requiring further clarification are encouraged to contact the Ohio State Dental Board at (614) 466-2580.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all dental hygiene and general education courses as listed in the curriculum guide for the AAS degree in dental hygiene.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Dental Hygiene Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with the program director and counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with the program director and counselor to review program prerequisites and requirements.

- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher. See program director for specific grade policy.
  - HLTH 1215 Medical Terminology for Health Professionals
  - BIOL 2210 Anatomy & Physiology I

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
DNHY 1110	Introduction to Preventive Oral Hygiene	4
DNHY 1111	Anatomy of Orofacial Structures	5
DNHY 1112	Dental Radiology	3
FYEX 1000	First Year Experience	1
		17

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
DNHY 1122	Nutrition and Preventive Oral Hygiene Concepts	2
DNHY 1123	General and Oral Pathology	2
DNHY 1124	Periodontics I	2
DNHY 1125	Dental Hygiene Practice - Clinic I	3
DNHY 1126	Dental Hygiene Practice - Seminar I	1
DNHY 1127	Current Concepts in Dental Materials	2
		16

Summer I:

DNHY 2005	Pain Management for Dental Hygienists	2
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
PSYC 1500	Introduction to Psychology	3
		8

Summer II:

BIOL 2700	Microbiology	4
ENGL 1120	English Composition II	3
		7

Third Semester:

DNHY 2110	Periodontics II	1
DNHY 2111	Dental Pharmacology and Pain Control	2
DNHY 2112	Community Dental Health I	1
DNHY 2113	Dental Specialties and Extended Dental Hygiene Functions	2
DNHY 2114	Dental Hygiene Practice - Clinic II	4
DNHY 2115	Dental Hygiene Practice - Seminar II	1
SOCY 1150	Principles of Sociology	3
		14

Fourth Semester:

COMM 1050	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
DNHY 2126	Practice Management	1
DNHY 2127	Community Dental Health II	2
DNHY 2128	Dental Hygiene Practice - Clinic III	4
DNHY 2129	Dental Hygiene Practice - Seminar III	1
MATH 1330 or higher**		3
		13
	Program Total:	**75**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

**Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.

Health Information Management Technology (9345)

The Health Information Management Technology (HIMT) associate degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management (CAHIM). Graduates of this program are eligible to sit for the Registered Health Information Technician (RHIT) exam.

Lakeland's Health Information Management Technology (HIMT) degree program prepares students to function effectively as beginning Health Information Technologists.

Health Information Management Technology is a profession that focuses on healthcare data and the management of healthcare information resources. It represents a continuum of practice concerned with health-related information and management systems to collect, store, process, retrieve, analyze, disseminate and communicate information related to the research, planning, provision, financing and evaluation of health services.

The Health Information Management Technology program teaches students to work with medical records and statistics, code medical data, maintain health record systems, and control the usage and release of health information.

Program Outcomes:

- Adhere to health information requirements and standards
- Utilize clinical classifications
- Support data collection and reimbursement systems
- Abstract healthcare data for analysis and presentation
- Adhere to security, privacy and confidentiality policies
- Apply organizational management techniques
- Use information technology systems to process health information
- Model professional behavior, ethics, and appearance

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all health information management technology and general education courses as listed in the curriculum guide for the AAS degree in health information technology management.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Health Information Management Technology (HIMT) Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with a counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option
This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with a counselor to review program prerequisites and requirements.
- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher.
  - HLTH 1215 Medical Terminology for Health Professionals
  - BIOL 2210 Anatomy & Physiology I

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

Note: *Students planning to transfer to a four-year college are encouraged to take ENGL 1120 English Composition II in addition to the following requirements.*

First Semester:

BIOL 2210	Anatomy and Physiology I	4
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
HIMT 1100	Introduction to Health Information Data Management	3
HIMT 1240	Ethics and Legal Issues for Health Information Management	2
HLTH 1600	Basic Pharmacology	2
ITIS 1000**	Introduction to Personal Computers	1
		16

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
COMM 1050***	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
HIMT 1200	Healthcare Records and Documentation	3
HIMT 1300	Healthcare Applied Information Systems and Services	3
MATH 1330 or higher****		3
		15

Summer:

HLTH 2100	Pathophysiology	3
		3

Third Semester:

HIMT 1220	Coding and Classification Systems: HCPCS/CPT	3
HIMT 2050	Coding and Coding Classification Systems: ICD-10-CM and ICD-10-PCS	3
HIMT 2150	Data Delivery and Quality Assessment	3
HIMT 2545	Clinical Practicum I	3
HIMT 2546	Seminar I	1
ITIS 1520	Microsoft Office Excel: Skills and Techniques	3
		16

Fourth Semester:

BUSM 1800	Essentials of Management and Supervision	3
HIMT 2530	Reimbursement Methodologies	2
HIMT 2540	Advanced Coding	3
HIMT 2550	Clinical Practicum II	3
HIMT 2600	Seminar II	1
PSYC 1500	Introduction to Psychology	3
OR		
SOCY 1150	Principles of Sociology	
		15
	Program Total:	**65**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may substitute ITIS 1005. This 3 credit TAG course may be required for students planning to transfer to a four-year college.*

****Students may substitute either COMM 1000 or COMM 1100. One of these 3 credit courses may be required for students transferring to a four-year college.*

*****Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Histotechnology (9395)

A histotechnician is an individual who is trained in the preparation and staining of tissue slides for microscopic examination and disease diagnosis by the pathologist. Histotechnicians may be employed in a variety of areas, such as hospitals, clinics, doctors' offices, research, veterinary pathology, marine biology, and forensic pathology. Histotechnicians may preserve organs for later examination and perform enzyme immunohistochemistry techniques. Histotechnicians may also assist the pathologist in the preparation of frozen tissue sections which are used to provide rapid diagnosis.

Mission
Lakeland Community College's Histotechnology Program prepares students to enter this field with entry-level knowledge, competencies, ability and problem-solving skills needed to function in the routine pathology laboratory setting.

Graduates of the program will be eligible for:

- Employment as an entry level practitioner in hospitals, clinics, doctor's offices, and research facilities.
- Transfer to a bachelor degree program
- The national certification examination for HT given by ASCP (American Society of Clinical Pathology)
- Possess the skills of current histotechnology practices as entry level practitioners

Program Outcomes/Goals
The outcomes/goals of the Histotechnology Program will be to:

1. Provide the students with the knowledge and technical skills for career entry into the profession of histotechnology.
2. Prepare students to meet the criteria to sit for the ASCP Board of Registry Examination for Histotechnology.
3. Cultivate personal growth and development through humanities, social science, and communication courses.
4. Develop interpersonal skills and attitudes needed to interact with clients, laboratory staff and other researchers, pathologists, and healthcare professionals.
5. Promote students' awareness of medical ethics and develop their professionalism.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all histotechnology and general education courses as listed in the curriculum guide for the AAS degree in histotechnology.

ADMISSION PROCEDURES:
Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Histotechnology Program:

OPTION 1: High School Option
This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.

- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with the program director and counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option
This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with a counselor to review program prerequisites and requirements.
- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher.
  - HLTH 1215 Medical Terminology for Health Professionals
  - BIOL 2210 Anatomy & Physiology I

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

Students must meet specific admission requirements for this program.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
CHEM 1100	Elementary Chemistry	4
COMM 1050*	Fundamentals of Public Speaking	2
OR		
COMM 1150	Fundamentals of Interpersonal Communication	
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
HSTY 1100	Introduction to Histotechnology	4
		18

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
ENGL 1120	English Composition II	3
HSTY 2100	Histology	3
HSTY 2210	Fundamentals in Clinical Immunology	2
HSTY 2250	Histotechnique	3
		15

Summer:

BIOL 2700	Microbiology	4
CHEM 1150	Introduction to Organic Chemistry	4
HLTH 1150	Introduction to Electronic Health Records	1
		9

Third Semester:

HLTH 2100	Pathophysiology	3
HSTY 2050	Histochemistry	4
HSTY 2151	Specialty Areas in Histotechnology	3
MATH 1330***	Statistics for the Health Sciences	3
		13

Fourth Semester:

HSTY 2300	Histotechnician Clinical Directed Practice	6
HSTY 2400	Histotechnician Seminar	2
PSYC 1500	Introduction to Psychology	3
OR		
SOCY 1150	Principles of Sociology	
		11
		Program Total: 66

**Students may substitute COMM 1100. This 3 credit course may be required for students transferring to a four-year college.*

***English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

****Students may substitute MATH 1550 Statistics. This 4 credit course may be required for students transferring to a four-year college.*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Medical Laboratory Technology (9320)

Medical Laboratory Technology, a clinical laboratory science, serves an essential and responsible role in the healthcare system. Physicians rely on laboratory technicians and the results of their analyses to aid them in determining diagnosis, treatment, and evaluation of the effectiveness of treatment.

Lakeland's Medical Laboratory Technology program combines basic science, general education, medical laboratory, and clinical laboratory experiences.

Medical laboratory technicians are an important part of the medical diagnostic team. They perform general tests in all areas of the clinical laboratory. Working under the supervision of a medical technologist or pathologist, a medical laboratory technician performs testing which gives the physician clues as to the absence, presence, extent, and causes of disease. This skilled professional utilizes a wide array of intricate precision instruments such as automated analyzers, microscopes, and electronic counters. Clinical experiences include rotations in microbiology, parasitology, mycology, urinalysis, immunology, blood banking, hematology, and chemistry.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all medical laboratory technology and general education courses as listed in the curriculum guide for the AAS degree in medical laboratory technology.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Medical Laboratory Technology Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with the program director and counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with the program director and counselor to review program prerequisites and requirements.

- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher.
  - HLTH 1215 Medical Terminology for Health Professionals
  - BIOL 2210 Anatomy & Physiology I

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
CHEM 1100*	Elementary Chemistry I	4
FYEX 1000	First Year Experience	1
MDLT 2150	Hematology and Coagulation	5
MDLT 2151	Blood Collection Techniques	1
MDLT 2152	Urinalysis	1
MDLT 2153	Body Fluid Analysis	1
		17

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
BIOL 2700	Microbiology	4
ENGL 1110**	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
MDLT 2250	Clinical Immunology	3
MDLT 2350	Immunohematology	4
		18

Summer:

CHEM 1150	Introduction to Organic Chemistry	4
ENGL 1120	English Composition II	3
PSYC 1500	Introduction to Psychology	3
OR		
SOCY 1150	Principles of Sociology	
		10

Third Semester:

COMM 1150***	Fundamentals of Interpersonal Communication	2
HLTH 1150	Introduction to Electronic Health Records	1
MDLT 2550	Clinical Chemistry	5
MDLT 2650	Clinical Microbiology	5
		13

Fourth Semester:

MATH 1330 or other college-level mathematics course****		
MDLT 2750	Clinical Directed Practicum	6
MDLT 2850	Medical Laboratory Technology Seminar	2
		11
	Program Total:	**69**

**Students planning to transfer to a four-year college should consider taking MATH 1650, CHEM 1500, and CHEM 1600 and consult with a counselor.*

***English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

****Students may substitute COMM 1100. This 3 credit course may be required for students transferring to a four-year college.*

*****Students planning on transferring to a four-year college should take a sequence of math as advised by their counselor.*

Associate of Applied Science Degree

Applied Studies - Health Technologies

Multi-Skilled Health Technology (9325)

Lakeland's Multi-Skilled Health Technology degree program is designed to meet the ever changing needs of the healthcare delivery system by preparing students with cross-training in more than one healthcare skill. Students will learn to perform more than one function, often in more than one discipline within the allied health professions.

Students are required to select at least two specialization areas in addition to the general education and health technology core courses. Many of these specialization areas have national certification or state licensure. Students who complete these specialization requirements will be eligible to sit for the appropriate certification or licensure examinations.

Since there are many combinations of areas of specialization, students should contact the program director to discuss their career goal to plan for their curriculum.

Students must complete a minimum of 62-68 credits as follows:

- 20 credit hours of general education core courses
- 12-18 credits from related core courses
- 30 credit hours from technical electives, including completion of **at least two areas of specialization**

Students who are not seeking the Associate of Applied Science Degree or students who already have a health technology degree but would like to obtain additional credentials in certain skills can enroll in individual certificate programs for each of the specialization areas.

Students must meet specific admission requirements for this program. Interested students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all multi-skilled health technology and general education courses as listed in the curriculum guide for the AAS degree in multi-skilled health technology.

Certificates are also available.

Core Courses:

GENERAL EDUCATION COURSES:

BIOL 2210	Anatomy and Physiology I	4
BIOL 2220	Anatomy and Physiology II	4
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
ENGL 1120	English Composition II	3
MATH 1330 or other college-level mathematics course**		
PSYC 1500	Introduction to Psychology	3
OR		
SOCY 1150	Principles of Sociology	
		Total: 20

RELATED COURSES:

FYEX 1000	First Year Experience	1
HLTH 1100	Introduction to U.S. Health Care System	2
HLTH 1150	Introduction to Electronic Health Records	1
HLTH 1215	Medical Terminology for Health Professionals	3
HLTH 1500	Ethics and Legal Issues for Health Professionals	2
HLTH 2100	Pathophysiology	3
Choose course(s) from the Related Electives list		0-6
		Total: 12-18

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

RELATED ELECTIVES: (minimum 0-6 credits)

BUSM 1620	Introduction to Entrepreneurship	3
COMM 1000	Effective Public Speaking	3
OR		
COMM 1050	Fundamentals of Public Speaking	2
OR		
COMM 1100	Effective Interpersonal Communication	3
OR		
COMM 1150	Fundamentals of Interpersonal Communication	2
ITIS 1000	Introduction to Personal Computers	1
OR		
ITIS 1005	Computers and Information Processing	3

Any other course(s) as general electives.

TECHNICAL ELECTIVES:

NOTE: *Some of the following courses require admission to a specific certificate/area of specialization.*

EMTS 1010	Emergency Medical Technician-Basic	7
EMTS 2011	Paramedic Beginner	12
EMTS 2021	Paramedic Intermediate A	4
EMTS 2031	Paramedic Intermediate B	4
EMTS 2041	Paramedic Advanced	4
HIMT 1220	Coding and Classification Systems: HCPCS/CPT	3
HIMT 2050	Coding and Coding Classification Systems: ICD-10-CM and ICD-10-PCS	3
HIMT 2530	Reimbursement Methodologies	2
HIMT 2540	Advanced Coding	3
HLTH 1238	Structure, Function, Disease, and Therapeutics of the Human Body	4
HLTH 1240	Phlebotomy	3
HLTH 1260	Phlebotomy Clinical Practicum	2
HLTH 1265	Phlebotomy Seminar	1
HLTH 1300	Nutrition and Family Health	2
HLTH 1310	Nutrition and Diet Therapy	2
HLTH 1400	Customer Service in Healthcare	2
HLTH 1600	Basic Pharmacology	2
HLTH 1700	Basic Electrocardiography	2
MDAS 1110	Introduction to Medical Assisting	3
MDAS 1150	Medical Office Insurance and Reimbursement	3
MDAS 1210	Basic Patient Skills	2
MDAS 1220	Specialty Medical Assisting	3
MDAS 1250	Medical Office Surgical Procedures	2
MDAS 1300	Physician Office Laboratory	3
MDAS 1700	Medical Assisting Practicum	3
MDAS 1800	Medical Assisting Seminar	1
MDLT 2151	Blood Collection Techniques	1
PEHR 1250	First Aid	2
PEHR 1500	Health and Wellness	1
PEHR 1550	Introduction to Personal Training	2
PEHR 1600	Exercise Physiology I	2
PEHR 1650	Health Fitness	2
PEHR 1660	Diet and Weight Management Strategies for Sport and Fitness	2
PEHR 1670	Instructional Techniques: Strength and Cardio Fitness Training	2
PEHR 1750	Personal Health	3
PEHR 2500	Athletic Training	2
PEHR 2750	Personal Trainer Internship/Seminar	2

Multi-Skilled Health Technology Certificates/Areas of Specialization

- Administrative Medical Office Assistant
- Coding
- Electrocardiography
- Emergency Medical Technology-Basic
- Emergency Medical Technology-Paramedic
- Health and Wellness
- Medical Assisting
- Personal Trainer
- Phlebotomy

Each of these certificates can also be used as an area of specialization for the Multi-Skilled Health Technology degree program.

- Students must earn a "C" or higher in all prerequisite and technical courses required for the certificate to be eligible for that certificate.
- Students must complete a minimum of one half of the required certificate courses at Lakeland to be eligible for the certificate.

Administrative Medical Office Assistant Certificate/Area of Specialization (3549)

Students must be formally accepted into the program. Admission requirements include a successful passing score on the required program pre-admission test and completion of HLTH 1215 with a grade of "C" or higher.

Students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

First Semester:

ENGL 1110* .....English Composition I (A) 3
OR
ENGL 1111 .....English Composition I (B)
HLTH 1215 .....Medical Terminology for Health Professionals 3
MDAS 1110.....Introduction to Medical Assisting 3
MDAS 1150.....Medical Office Insurance and Reimbursement.....3

12

Second Semester:

HLTH 1150 .....Introduction to Electronic Health Records.....1
HLTH 1238 .....Structure, Function, Disease, and Therapeutics of the Human Body 4
HLTH 1400 .....Customer Service in Healthcare.....2

7

Certificate Total: 19

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the certificate).*

Coding Certificate/Area of Specialization (3261)

This certificate/area of specialization prepares students for classifying medical data from patient records in hospital and physician-based settings. Students in the coding certificate/area of specialization gain knowledge in medical terminology, disease processes, pharmacology, reimbursement methodologies, ICD-10-PCS, and CPT coding systems.

Hospitals, physicians' offices and insurance companies employ individuals with knowledge and skill in the language and science of medicine and its coding system. These coding practitioners review patients' records and assign numeric codes for each diagnosis and procedure. Coded information is used to determine and secure appropriate reimbursement for healthcare services rendered.
After completion of the certificate, students may choose to continue their education and earn the A.A.S. in Health Information Management Technology. Coding certificate courses are applicable toward the A.A.S. degree.

First Semester:

ENGL 2201* .....Introduction to Technical Writing 2
OR
ENGL 1110 .....English Composition I (A) 3
OR
ENGL 1111 .....English Composition I (B)
HLTH 1215 .....Medical Terminology for Health Professionals 3

5-6

Second Semester:

HLTH 1150 .....Introduction to Electronic Health Records.....1
HLTH 1238** .....Structure, Function, Disease, and Therapeutics of the Human Body 4
OR
BIOL 2210 .....Anatomy and Physiology I

5

Third Semester:

HIMT 1220 .....Coding and Classification Systems: HCPCS/CPT.....3
HIMT 2050 .....Coding and Coding Classification Systems: ICD-10-CM and ICD-10-PCS.....3

6

Fourth Semester:

HIMT 2530 .....Reimbursement Methodologies 2
HIMT 2540 .....Advanced Coding 3

5

Certificate Total: 21-22

**Students planning on completing an associate degree should choose ENGL 1110 or ENGL 1111. This course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the certificate).*

***Students planning on completing a health-related associate degree program should choose BIOL 2210.*

Electrocardiography Certificate/Area of Specialization (3251)

This certificate/area of specialization provides students with the basic knowledge and skills to perform an electrocardiogram (ECG). It also introduces basic cardiac arrhythmias and medications used to treat them. After completion of the program, students are eligible to take a national certification exam.

NOTE: *Students completing the Medical Assisting Certificate/Area of Specialization will have also fulfilled the requirements for this certificate/area of specialization.*

HLTH 1215 .....Medical Terminology for Health Professionals 3
HLTH 1700 .....Basic Electrocardiography 2

Certificate Total: 5

Emergency Medical Technology-Basic Certificate/Area of Specialization (3501)

After completing this certificate/area of specialization, students are eligible to take the National Registry Exam to become certified in the State of Ohio* as a basic emergency medical technician. This certificate/area of specialization also serves as a prerequisite for paramedic training.

NOTE: *EMTS 1010 has a prerequisite of CPR-American Heart Association: Health Care Provider. Students must also be 18 years of age or older to enroll in the course.*

EMTS 1010 .....Emergency Medical Technician-Basic.....7

Certificate Total: 7

(NOTE: EMTS 1050 Emergency Medical Technician-Refresher can be used to meet the requirements for renewal of certification as a Basic EMT.)

**Accredited by the Ohio Department of Public Safety, Accreditation No. 063347.*

Emergency Medical Technology-Paramedic Certificate/Area of Specialization (3254)

Paramedic emergency medical technicians work under the direction of a physician to recognize, assess, and manage medical emergencies of acutely ill or injured patients in prehospital care settings. Their goal is to prevent and reduce mortality and morbidity due to illness and injury. Paramedics possess basic skills in opening up airways, restoring breathing, controlling bleeding, treating for shock, and administering oxygen. In addition, paramedics may administer drugs, interpret electrocardiograms, perform endotracheal intubation, and use other complex equipment.

Upon completion of this certificate/area of specialization, students are eligible to take the National Registry Certification exam to become certified in the State of Ohio as a paramedic.

Students must apply for admission to this certificate/area of specialization. Students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all science and program-specific courses for graduation.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this certificate program.

- Complete college application(s).
- EMTS 2011 has prerequisites that include HLTH 1238 Structure, Function, Disease, and Therapeutics of the Human Body OR both BIOL 2210 Anatomy and Physiology I and BIOL 2220 Anatomy and Physiology II.
- Current Ohio certification as an EMT.
- Current American Heart Association; Health Care Provider or American Red Cross; Professional Rescuer CPR card.
- Successful passing score on the required program pre-admission test.
- Meet with a counselor or director of admissions to review program prerequisites and requirements.

EMTS 2011	Paramedic Beginner	12
EMTS 2021	Paramedic Intermediate A	4
EMTS 2031	Paramedic Intermediate B	4
EMTS 2041	Paramedic Advanced	4
		Certificate Total: 24

Health and Wellness Certificate/Area of Specialization (3252)

This certificate/area of specialization provides students with a broad knowledge in exercise and fitness, nutrition and its effects on health, basic care and prevention of injuries, first aid, and emergency procedures.

HLTH 1300	Nutrition and Family Health	2
PEHR 1250	First Aid	2
PEHR 1750	Personal Health	3
PEHR 2500	Athletic Training	2
		Certificate Total: 9

Medical Assisting Certificate/Area of Specialization (3550)

The goal of the program is to prepare competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains. Medical assistants are multi-skilled health professionals specifically educated to work in ambulatory settings performing administrative and clinical duties. The practice of medical assisting directly influences the public's health and well-being, and requires mastery of a complex body of knowledge and specialized skills requiring both formal education and practical experience that serve as standards for entry into the profession.

Administrative responsibilities may include telephone triage, updating and filing patient medical records, scheduling appointments, billing, and bookkeeping. Clinical duties may include taking vital signs and medical histories, preparing patients for examination, instructing patients, and performing basic diagnostic testing.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all science and program-specific courses for graduation.

The Lakeland Community College Medical Assisting Certificate program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board of the American Association of Medical Assistants Endowment (CRB-AAMAE). CAAHEP, 1361 Park Street, Clearwater, FL 33756, phone: 727.210.2350.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program and are advised to meet with a counselor or the program director. All courses except MDAS courses may be taken prior to acceptance in the Medical Assisting program. Acceptance into the program takes place when a student has completed the Medical Assisting application and is enrolled in MDAS 1110. Students may take any non-MDAS classes prior to application and acceptance into the program.

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with a counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for the Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript.
- Successful passing score on the required program pre-admission test.
- Meet with a counselor to review program prerequisites and requirements.

- The following course, or equivalent course at other regionally accredited colleges, must be completed with a "C" grade or higher
  - HLTH 1215 Medical Terminology for Health Professionals

NOTE 1: *Students are required to take the Math Placement Test and be placed into MATH 0850, or take MATH 0750 or NURS 0900.*

NOTE 2: *Students completing this certificate/area of specialization will have also met the requirements for the Electrocardiography Certificate/Area of Specialization.*

NOTE 3: *MDAS 1700 has prerequisites that include CPR-American Heart Association: Health Care Provider.*

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

Summer:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
HLTH 1215	Medical Terminology for Health Professionals	3
ITIS 1000	Introduction to Personal Computers	1
		7

Fall Semester:

HLTH 1100	Introduction to U.S. Health Care System	2
HLTH 1238	Structure, Function, Disease, and Therapeutics of the Human Body	4
HLTH 1500	Ethics and Legal Issues for Health Professionals	2
HLTH 1600	Basic Pharmacology	2
MDAS 1110	Introduction to Medical Assisting	3
MDAS 1150	Medical Office Insurance and Reimbursement	3
		16

Spring Semester:

HLTH 1700	Basic Electrocardiography	2
MDAS 1210	Basic Patient Skills	2
MDAS 1220	Specialty Medical Assisting	3
MDAS 1250	Medical Office Surgical Procedures	2
MDAS 1300	Physician Office Laboratory	2
PSYC 1500**	Introduction to Psychology	3
		14

Summer:

(1st 5 weeks)		
MDLT 2151	Blood Collection Techniques	1
(Full Summer Session)		
MDAS 1700	Medical Assisting Practicum	3
MDAS 1800	Medical Assisting Seminar	1
		5
		Certificate Total: 42

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the certificate).*

***Students completing this area of specialization for the Multi-Skilled Health Technology degree will use PSYC 1500 to meet the Social and Behavioral Sciences Electives requirement.*

Personal Trainer Certificate (0201)

This certificate is designed for students interested in becoming a personal trainer. Courses within this program will help students prepare for a certification exam. It is recommended that students pursue certification, but it is not required, nor is it part of the certificate program. Many of these courses may be applied towards an Associate of Arts or an Associate of Science Degree, and may also be applicable for transferring to a four-year college. Students should consult a Lakeland counselor prior to beginning this program in order to ensure maximum transferability.

For more information, contact 440.525.7832.

NOTE: *Some courses in this certificate include prerequisites that are not included in the certificate. Students with equivalent knowledge and experience may request to have these prerequisites waived. Students who have not already taken the prerequisites and do not have equivalent knowledge and experience will need to take additional courses.*

BIOL 2210 has a prerequisite of high school chemistry or CHEM 1100, high school biology in the last five years; or BIOL 1200.

BIOL 2210	Anatomy and Physiology I	4
BIOL 2220	Anatomy and Physiology II	4
BUSM 1620	Introduction to Entrepreneurship	3
COMM 1100	Effective Interpersonal Communication	3
PEHR 1250	First Aid	2
PEHR 1550	Introduction to Personal Training	2
PEHR 1600	Exercise Physiology	2
PEHR 1660	Diet and Weight Management Strategies for Sport and Fitness	2
PEHR 1670	Instructional Techniques: Strength and Cardio Fitness	2
PEHR 1750	Personal Health	3
PEHR 2500	Athletic Training	2
PEHR 2750*	Personal Trainer Internship/Seminar	2
	Certificate Total:	**31**

**It is recommended that PEHR 2750 be completed as one of the last classes in the certificate. Please contact 440.525.7301 for an appointment one semester prior to enrolling in this course.*

Phlebotomy Certificate/Area of Specialization (3601)

This certificate/area of specialization provides students with the skill and knowledge to collect blood samples by venipuncture and skin puncture. As vital members of the healthcare team, phlebotomists must be able to collect quality samples from patients, assuring quality laboratory results and conforming to current CDC and OSHA guidelines. Phlebotomists must like challenge and responsibility and be able to communicate effectively with patients, laboratory personnel, and other healthcare professionals. After completion of this program, students are eligible to take a national certification exam.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all science and program-specific courses for graduation.

Students must apply for admission to this certificate/area of specialization. Students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

NOTE: *HLTH 1215 must be completed before applying for admission to the program.*

First Semester:

HLTH 1215 .....Medical Terminology for Health Professionals 3
HLTH 1238 .....Structure, Function, Disease, and Therapeutics of the Human Body 4
HLTH 1400 .....Customer Service in Healthcare.....2

9

Second Semester:

(1st 8 weeks)

HLTH 1150 .....Introduction to Electronic Health Records.....1
HLTH 1240 .....Phlebotomy.....3

(2nd 8 weeks)

HLTH 1260 .....Phlebotomy Clinical Practicum 2
HLTH 1265 .....Phlebotomy Seminar.....1

7

Certificate Total: 16

Nursing (RN) (9330)

Lakeland's Nursing (RN) degree program prepares students to function effectively as entry-level registered nurses in a variety of healthcare settings.

The program is accredited by the Accreditation Commission for Education in Nursing* and approved by the Ohio Board of Nursing**. Upon Program completion, graduates are eligible to take the NCLEX-RN examination which leads to state licensure and registration as an RN. A background check is required prior to the NCLEX examination. Any student who has been convicted of a felony, misdemeanor drug violation, a misdemeanor in the course of practice, or crime involving gross immorality or moral turpitude, may be denied licensure by the Ohio Board of Nursing. Students requiring further clarification are encouraged to visit the Ohio Board of Nursing website at http://www.nursing.ohio.gov. The site lists 11 offenses that are automatic bars to obtaining a nursing license.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum resulting in ineligibility to complete the nursing program. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing is required in accordance with clinical affiliation requirements and/or for patient/student health and safety.

Daytime or Evening/Weekend Program Options are available. Clinical experiences for both options may require a combination of day, evening and weekend times.

Advanced placement for LPNs through the ACCESS to Registered Nursing (Daytime) option is available.

Students must be admitted to the Nursing program to enroll in NURS courses. Non-nursing courses may be taken prior to admission to the program.

A minimum GPA of 2.0 and a "C" grade or higher is required in all nursing and general education courses as listed in the curriculum guide for the AAS degree in nursing.

** Accreditation Commission for Education in Nursing: 3343 Peachtree Rd., N.E., Suite 850, Atlanta, GA 30326, phone 404.975.5000*

*** Ohio Board of Nursing, 17 South High St., Suite 400, Columbus, OH 43215, phone: 614.466.3947*

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Nursing (RN) Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with a counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript.
- Successful passing score on the required program pre-admission test.

- Meet with a counselor to review program prerequisites and requirements.
- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher prior to admission. **Please note that BIOL 2210, MATH 1330, and MATH 1550 may be taken a total of three times each.**
  - BIOL 2210 Anatomy & Physiology I
  - MATH 1330 Statistics for Health Sciences

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
NURS 1020	Introduction to Nursing	3
NURS 1060	Pharmacology Fundamentals and Dosage Calculation	2
NURS 1090	Nursing Care of Adults I	4
		17

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
NURS 1250	Nursing Care of Adults II	9
PSYC 1500	Introduction to Psychology	3
		16

Summer:

HLTH 1310	Nutrition and Diet Therapy	2
MATH 1330**	Statistics for the Health Sciences	3
PSYC 2100	Lifespan Development for Nursing	3
		8

Third Semester:

BIOL 2700	Microbiology	4
COMM 1000	Effective Public Speaking	3
(Weeks 1-5, Weeks 6-10, Weeks 11-15)***		
NURS 2160	Nursing Care of Chronic and Vulnerable Populations	3
OR*****		
NURS 2161	Nursing Care of Vulnerable Populations in Global Communities	
NURS 2210	Nursing Care of Childbearing Families	3
NURS 2260	Nursing Care of Children and Families	3
		16

Fourth Semester:

SOCY 1150	Principles of Sociology	3
NURS 2360	Nursing Care of Adults III	9
		12
	Program Total:	**69**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students may choose to take a higher level statistics course for transfer to a BSN program.*

****Students will be assigned a schedule for completing these three five-week courses.*

*****The Global Community course includes an international clinical experience. This option will be offered intermittently based on the availability of the experience.*

Applied Studies - Health Technologies

Associate Degree Nursing - ACCESS to Registered Nursing*

Advanced placement for LPNs is available through the ACCESS to Registered Nursing option. An LPN (must hold a current license with no restrictions) who qualifies must have completed the following courses with a 2.5 GPA or higher and must take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a grade of "C" or higher prior to acceptance into the Access to Registered Nursing* option. A minimum GPA of 2.0 and a "C" grade or higher is required in all nursing and general education courses as listed in the curriculum guide for the AAS degree in nursing.

ENGL 1110** English Composition I (A)
OR
ENGL 1111 English Composition I (B)
BIOL 2210 *** Anatomy & Physiology I
BIOL 2220 Anatomy & Physiology II
HLTH 1310 Nutrition & Diet Therapy
PSYC 1500 Introduction to Psychology

Students transferring credits must make an appointment to meet with a Lakeland counselor. TEAS exam is waived for LPN's pursuing ACCESS to Nursing program.

To receive advanced placement, the LPN must complete NURS 1560 Access to Registered Nursing and NURS 1610 Transition to the Nursing Care of Adults II, with a grade of "C" or higher and must pass required competency testing. The LPN will then be given credit for the following Nursing Courses:

NURS 1020 Introduction to Nursing
NURS 1060 Pharmacology Fundamentals and Dosage Calculation
NURS 1090 Nursing Care of Adults I
NURS 1250 Nursing Care of Adults II

Summer Semester:

FYEX 1000	First Year Experience	1
MATH 1330****	Statistics for Health Sciences	3
PSYC 2100	Lifespan Development in Nursing	3
		7

First Semester:

NURS 1560*	Access to Registered Nursing	3
NURS 1610*	Transition to the Caring Role of the Nurse with Adults – Level II	5
		8

Second Semester:

BIOL 2700	Microbiology	4
COMM 1000	Effective Public Speaking	3
(Weeks 1-5, Weeks 6-10, Weeks 11-15)****		
NURS 2160	Nursing Care of Chronic and Vulnerable Populations	3
OR		
NURS 2161******	Nursing Care of Vulnerable Populations in Global Communities	
NURS 2210	Nursing Care of Childbearing Families	3
NURS 2260	Nursing Care of Children and Families	3
		16

Third Semester:

SOCY 1150	Principles of Sociology	3
NURS 2360	Nursing Care of Adults III	9
		12
		Program Total: 43

**Accepted to ACCESS To Registered Nursing option.*

***English course selection is based on COMPASS test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

****Indicates that course has a prerequisite.*

*****Students may choose to take a higher level statistics course for transfer to a BSN program.*

******Students will be assigned a schedule for completing these three 5 week courses.*

*******Global Community course includes an international clinical experience. This option will be offered intermittently based on availability of the experience.*

Radiologic Technology (9380)

Radiographers work under the supervision of qualified radiologists or physicians. Radiographers perform imaging examinations, process and evaluate radiographic images, utilize radiographic equipment, manage quality assurance, provide patient education relevant to specific imaging procedures, and apply radiation protection principles to patients, self, and others. Work settings include hospitals, specialized imaging centers, urgent care clinics, private physician offices, industry, or civil service/public health centers.

Lakeland's Radiologic Technology degree program prepares students to be competent entry-level radiographers. Upon satisfactory completion of the program requirements, graduates are eligible to apply for examination by the American Registry of Radiologic Technologists. Students convicted of any felony or misdemeanor may be prohibited from applying for the certification examination.

Students must be admitted to the Radiologic Technology program to enroll in RADT courses. Other courses may be taken prior to admission to the program.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all radiologic technology and general education courses as listed in the curriculum guide for the AAS degree in radiologic technology.

Certificates in Computed Tomography and Magnetic Resonance Imaging are available.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Radiologic Technology Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with a counselor to review program prerequisites and requirements.
- Complete an observation day in a radiology department (effective spring 2016).

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with a counselor to review program prerequisites and requirement.
- The following courses, or equivalent courses at other regionally accredited colleges, must be completed with a "C" or higher and have a minimum cumulative GPA of 2.5 or higher.

- HLTH 1215 Medical Terminology for Health Professionals
- BIOL 2210 Anatomy & Physiology I

- Complete an observation day in a radiology department (effective spring 2016).

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
RADT 1100	Introduction to Radiologic Technology	4
RADT 1210	Radiographic Procedures I	3
(1st 8 weeks)		
RADT 1300	Patient Care in Radiography	1
(2nd 8 weeks)		
RADT 1310	Clinical Experience I	1
		17

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
ENGL 1120	English Composition II	3
RADT 1150	Principles of Imaging I	4
RADT 1220	Radiographic Procedures II	3
RADT 1320	Clinical Experience II	2
		16

Summer Semester:

MATH 1330 or any mathematics course from MATH 1550 or higher**		3
RADT 2050	Seminar I	1
RADT 2310	Clinical Experience III	2
		6

Third Semester:

PSYC 1500	Introduction to Psychology	3
RADT 2100	Special Imaging Modalities	2
RADT 2150	Radiation Physics	3
RADT 2200	Principles of Imaging II	3
RADT 2320	Clinical Experience IV	2
Choose course(s) from the electives list		3
		16

Fourth Semester:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
RADT 2280	Radiographic Pathology	2
RADT 2330	Clinical Experience V	2
RADT 2410	Radiation Protection and Biology	3
Choose course(s) from the Arts and Humanities Electives list		3
		13

Summer Semester:

RADT 2340	Clinical Experience VI	2
RADT 2450	Seminar II	2
		4

Program Total: 72

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Elective list: minimum 3 credits

HLTH 2100	Pathophysiology	3
ITIS 1005	Computers and Information Processing	3
PHOT 1000	History of Photography	3
PHYS 1500	Astronomy	4
PHYS 1550	Everyday Physics	3
PSCI 1100	Conceptual Physical Science	4
PSCI 1300	Earth Science	3
PSCI 1500	Introduction to Ocean Studies	3
SOCY 1150	Principles of Sociology	3

Any other course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Radiologic Technology Certificates

- Computed Tomography
- Magnetic Resonance Imaging

Computed Tomography Certificate (3811)

Computed Tomography (CT) technologists are responsible for taking detailed cross-sectional images of the internal structures of the human body using advanced computerized x-ray equipment. These members of the healthcare team work closely with physicians to provide radiographic studies that assist with patient diagnoses and treatment.

The Computed Tomography certificate program provides technologists with a solid foundation in CT physics and imaging, cross-sectional anatomy, and pathophysiology.

Students must meet specific admission requirements for this program. Candidates for this certificate program must be registered by the American Registry of Radiologic Technologists (ARRT), or be registry eligible. Students should contact the director of admissions or the Counseling Office for details about applying for admission to the certificate program.

First Semester:

RADT 2600	Introduction to Computed Tomography and Magnetic Resonance Imaging	2
RADT 2620	Sectional Anatomy and Pathophysiology I	3
RADT 2720	CT Clinical Experience	2
		7

Second Semester:

RADT 2640	Sectional Anatomy and Pathophysiology II	3
RADT 2710	CT Physics and Imaging	2
RADT 2720	CT Clinical Experience	2
		7

Certificate Total: 14

Magnetic Resonance Imaging Certificate (3821)

Magnetic resonance imaging (MRI) technologists use radio waves, powerful magnets, and computers to create images of the body. MRI has become an important diagnostic imaging method that has had a significant impact in the field of medicine.

The Magnetic Resonance Imaging certificate program provides technologists with a solid foundation in MRI physics and imaging, cross-sectional anatomy, and pathophysiology.

Students must meet specific admission requirements for this program. Candidates for this certificate program must be registered by the American Registry of Radiologic Technologists (ARRT), or be registry eligible. Students should contact the director of admissions or the Counseling Office for details about applying for admission to the certificate program.

First Semester:

RADT 2600	Introduction to Computed Tomography and Magnetic Resonance Imaging	2
RADT 2620	Sectional Anatomy and Pathophysiology I	3
RADT 2820	MRI Clinical Experience	2
		7

Second Semester:

RADT 2640	Sectional Anatomy and Pathophysiology II	3
RADT 2810	MRI Physics and Imaging	3
RADT 2820	MRI Clinical Experience	2
		8

Certificate Total: 15

Respiratory Therapy (9340)

Respiratory therapy involves preventive, diagnostic, rehabilitative, and intensive-care therapy for patients with current or potential cardiopulmonary problems.

Respiratory therapy, as a clinical discipline, has grown rapidly and has become an essential contributor to healthcare. Technological advancements and increased longevity combined with harmful effects caused by air pollution and hazardous occupations have created an increased demand for respiratory care practitioners.

Lakeland's Respiratory Therapy degree program provides a sound preparation for the registry examination and therapist employment. Students in the program will have a wide variety of clinical experiences in several affiliated hospitals, long-term care facilities, and other community-based respiratory care providers.

Students must be admitted to the Respiratory Therapy program to enroll in RESP courses. Other courses may be taken prior to admission to the program.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all respiratory therapy and general education courses as listed in the curriculum guide for the AAS degree in respiratory therapy.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Respiratory Therapy Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with a counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with a counselor to review program prerequisites and requirement.

- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher.
  - HLTH 1215 Medical Terminology for Health Professionals
  - BIOL 2210 Anatomy & Physiology I

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.
2. High school biology within last five years and CHEM 1100 Elementary Chemistry.
3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
PHYS 1440	Physics for Allied Health	3
RESP 1100	Fundamentals of Respiratory Therapy	3
RESP 1200	Cardiopulmonary Physiology	2
		16

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
MATH 1330 or higher**		3
RESP 1300	Cardiopulmonary Therapeutics	5
RESP 1400	Pharmacology	1
RESP 1500	Cardiopulmonary Pathology	3
		16

Summer:

BIOL 2700	Microbiology	4
RESP 1600	Advanced Diagnostics	5
RESP 1800	Introduction to Pediatric Respiratory Therapy	2
		11

Third Semester:

ENGL 1120	English Composition II	3
PSYC 1500	Introduction to Psychology	3
RESP 2100	Mechanical Ventilation	7
RESP 2200	Hemodynamics and Electrocardiography	3
		16

Fourth Semester:

COMM 1100	Effective Interpersonal Communication	3
RESP 2300	Long Term Care and Rehabilitation	6
RESP 2400	Advanced Therapeutics	3
		12
	Program Total:	**71**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Surgical Technology (9335)

Surgical technologists, who are integral members of the surgical team, work closely with surgeons, anesthesiologists, registered nurses and other surgical personnel in delivering patient care before, during, and after surgery. Surgical technologists have primary responsibility for maintaining the sterile field and ensuring that the surgical team adheres to aseptic techniques. They prepare, set up, and handle the instruments, supplies, and equipment necessary for the surgical procedure. In addition, they monitor conditions in the operating room and constantly assess the needs of the patient and the surgical team.

Upon successful completion of Lakeland's Surgical Technology program, graduates take the certifying examination administered by the National Board for Surgical Technology and Surgical Assisting (NBSTSA).

Students must be admitted to the Surgical Technology program to enroll in SURG courses. Other courses may be taken prior to admission to the program.

All students enrolled in a nursing or allied health program/certificate must complete a criminal background check and drug screen. In accordance with clinical site requirements, students with a criminal record may be ineligible to participate in a clinical course/rotation/practicum. Delays, for any reason, in obtaining background results may cause an interruption in the clinical rotation sequence or inability to complete program requirements. Additional background screening may be required by individual facilities.

Drug Testing may be requested in accordance with clinical affiliation requirements and/or for patient/student health and safety.

A minimum GPA of 2.0 and a "C" grade or higher is required in all surgical technology and general education courses as listed in the curriculum guide for the AAS degree in surgical technology.

ADMISSION PROCEDURES

Students must meet specific admission requirements for this program. Listed below are requirements for admission to the Surgical Technology Program:

OPTION 1: High School Option

This option is for current high school seniors or high school graduates who apply to the program within two years of high school graduation.

- Complete college application(s).
- Composite score of 21 or higher on the American College Test (ACT) or combined score of 1400 on the Scholastic Aptitude Test (SAT).
- Place into MATH 1330 Statistics for the Health Sciences or higher or pass MATH 0950 Intermediate Algebra.
- Complete high school algebra, chemistry, and biology with a "C" grade or higher.
- An overall high school GPA of 2.5 on a 4.0 scale or equivalent.
- Meet with the program director and counselor to review program prerequisites and requirements.

Upon successful completion of the above criteria, the applicant will be admitted into the program. Students must complete HLTH 1215 (Medical Terminology for Health Professionals) with a "C" grade or higher prior to enrolling in their first health technology course.

OPTION 2: College Option

This option is for students who do not qualify for admission under Option 1.

- Complete college application(s).
- Submit high school transcript as well as any college transcript(s).
- Successful passing score on the required program pre-admission test.
- Meet with the program director and counselor to review program prerequisites and requirements.

- Students must have a cumulative GPA of 2.0 or higher in program applicable courses. The following courses, or equivalent courses from other regionally accredited colleges, must be completed with a combined minimum cumulative GPA of 2.5 or higher and a "C" grade or higher.
  - HLTH 1215 Medical Terminology for Health Professionals
  - BIOL 2210 Anatomy & Physiology I

NOTE: *Students must meet one of these requirements to take BIOL 2210 with a "C" or higher:*

1. High school biology within last five years and high school chemistry.

2. High school biology within last five years and CHEM 1100 Elementary Chemistry.

3. Biology 1200 Fundamentals of Biology for the Health Technologies.

Students are required to take the Math Placement Test and be placed into MATH 1330 or complete MATH 0950 with a "C" grade or higher.

OPTION 3: Advanced Education Option
Students pursuing this option must have an Associate of Applied Science Degree in Nursing or Allied Health, Bachelor of Science Degree in a natural science, or an Associate of Science Degree to be waived from the preadmission testing. All other Option 2 requirements apply.

First Semester:

BIOL 2210	Anatomy and Physiology I	4
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
HLTH 1215	Medical Terminology for Health Professionals	3
SURG 1100	Surgical Technology I	5
		16

Second Semester:

BIOL 2220	Anatomy and Physiology II	4
MATH 1330	Statistics for the Health Sciences	3
OR		
MATH 1650	College Algebra	
SURG 1300	Surgical Technology II	7
SURG 1500	Surgical Pharmacology	2
		16

Summer:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
SURG 2100	Surgical Technology III	5
		8

Third Semester:

BIOL 2700	Microbiology	4
SURG 2300	Surgical Technology IV	7
Choose course(s) from the Social and Behavioral Sciences Electives list.		3
		14

Fourth Semester:

SURG 2500	Surgical Technology V	7
SURG 2600	Surgical Technology Seminar	1
Choose course(s) from the Arts and Humanities Electives list.		3
		11
	Program Total:	**65**

**English course selection is based on test placement results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Arts and Humanities Electives: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Sciences Electives: minimum 3 credits
ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Applied American Sign Language Studies (9312)

This program is designed to give students a foundation in American Sign Language (ASL) and to acquaint them with basic issues of concern to the Deaf community. Furthermore, the program offers an opportunity to individuals already working in the Deaf community to increase their understanding of ASL and Deaf culture in order to strengthen their knowledge and their communication skills. This program will give students sufficient training to: (1) allow for effective communication with Deaf persons in informal settings in teaching, human services, or healthcare; (2) enhance their credentials for employment opportunities which do not require interpreter certification but do assign value to skills in ASL and knowledge of Deaf culture; (3) earn the academic qualifications for entry into advanced studies at universities offering sign language programs; (4) enter an interpreter training program, after which they may sit for a certification examination, sponsored by the national licensing organization.

First Semester:

ASLI 1100	Introduction to American Sign Language I	4
ASLI 1550	Deaf History and Culture	3
COMM 1000	Effective Public Speaking	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
		14

Second Semester:

ASLI 1200	Introduction to American Sign Language II	4
ASLI 2700	Resources Concerning the Deaf Community	3
ENGL 1120	English Composition II	3
PSYC 1500	Introduction to Psychology	3
SOCY 1150	Principles of Sociology	3
		16

Third Semester:

ASLI 1700	Deaf Literature	3
ASLI 1800	American Sign Language I	4
Choose courses(s) from the Arts and Humanities Electives list.		3
Choose course(s) from the Related Electives list.		3
Choose any course as a general elective.		3
		16

Fourth Semester:

ASLI 1830	American Sign Language: Discourse	3
ASLI 1850	American Sign Language II	4
ASLI 2750	Applied Issues Concerning the Deaf Community	3
MATH 1330 or higher		3
Choose course(s) from the Related Electives list.		3
		16
	Program Total:	**62**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Related Electives: minimum 6 credits

COMM 1100	Effective Interpersonal Communication	3
OR		
COMM 2000	Advanced Public Speaking	
ENGL 2275	Multicultural Literary Studies	3
HMSV 1115	Introduction to Human Services	3
HMSV 1215	Dealing with Diversity	3
LING 1500	Introduction to Linguistics	3
PHIL 1500	Introduction to Philosophy	3
PHIL 2700	Ethics	3
PSYC 2800	Social Psychology	3
SOCY 2000	Ethnic Minorities in the U.S.	3
THEA 1200	Acting I	3

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Geospatial Technology (9680)

The Geospatial Technology Associate of Applied Science degree and certificate programs are designed to prepare students for careers in the burgeoning fields of geospatial technology. This includes positions in government and private industry in the fields of geographic information systems (GIS), remote sensing, mapping, and related areas. Geospatial technology is recognized by the US Department of Labor as a high-growth career field and this program will prepare students to enter this high demand job market.

First Semester:

ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
FYEX 1000	First Year Experience	1
GEOG 1500	Introduction to Geography	3
GEOG 1550	Physical and Environmental Geography	3
OR		
PSCI 1300	Earth Science	
GEOG 1700	Geographic Information Science I	3
ITIS 1005	Computers and Information Processing	3
		16

Second Semester:

ENGL 1120	English Composition II	3
OR		
ENGL 1121	English Composition II-Technical Focus	
GEOG 1600	World Regional Geography	3
GEOG 2700	Geographic Information Science II	3
ITCS 1010	Programming Logic	3
MATH 1550	Statistics	4
		16

Third Semester:

COMM 1000	Effective Public Speaking	3
OR		
COMM 1100	Effective Interpersonal Communication	
GEOG 2710	Spatial Data Acquisition and Management	3
GEOG 2750	Spatial Analysis and Modeling	3
ITDB 1400	Introduction to SQL	2
Choose course(s) from the Arts and Humanities Electives list.		3
		14

Fourth Semester:

GEOG 2730	Remote Sensing	3
GEOG 2760	Project Management in Geospatial Technology	3
GEOG 2780	Geospatial Technology in Internship/Seminar	2
Choose course(s) from the Technical Electives list.		5
Choose course(s) from general electives.		1
		14
	Program Total:	**60**

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Technical Electives: minimum 5 credits

CADT 1100 ..... Introduction to AutoCAD 3
CADT 1500 ..... Advanced AutoCAD 3
CIVT 2030 ..... Introduction to GPS Satellite Surveying 2
CIVT 2111 ..... Surveying I 2
CIVT 2112 ..... Surveying II 2
GEOG 2780* ..... Geospatial Technology in Internship/Seminar 3
ITCS 1105 ..... Web Programming I 3
ITCS 1810 ..... Visual Basic.NET Programming I 3
ITCS 1870 ..... Python Programming I 3
ITDB 1405 ..... Oracle PL/SQL Programming 2
OR
ITDB 1406 ..... Microsoft SQL Concepts 2
ITIS 1100 ..... Internet: Services, Tools and Web Page Creation 2
ITON 1050 ..... Using Microsoft Windows 7 1
OR
ITON 1060 ..... Using Microsoft Windows 8
ITON 1205 ..... Network+ and Networking Essentials 2
ITON 1610 ..... Wireless Communications and Networking 2
PHOT 1105 ..... Basic Photography ' Digital 3
PHOT 2300 ..... Introduction to Digital Photo Imaging 3
PHOT 2350 ..... Advanced Digital Photo Imaging 3
PHOT 2600 ..... Panoramic Photography 3

GEOG 2780 is a required course in the program. Students may take it a second time as an elective.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Geospatial Technology Certificate (6801)

Students must meet specific admission requirements for this program and are advised to meet with a counselor or the program director. All prerequisite courses or their equivalent must be completed prior to acceptance in the Geospatial Technology certificate program.

Provisional admission may be granted to students currently enrolled in the prerequisite courses, as long as all courses are completed before enrollment in first semester of the certificate program. Coursework in this certificate includes prerequisites that are not included in the certificate. Students with equivalent courses, knowledge and experience may request to have prerequisites waived prior to admission to the program.

Students must complete the following courses prior to program admission:

A minimum of 30 credit hours of for-credit college-level work with GPA of at least 2.0, including all of the following courses or their equivalents (with a grade of C or better): ENGL 1110 English Composition I or ENGL 1111 English Composition I, ITIS 1005 Computers and Information Processing, and one college-level mathematics course.

First Semester:

GEOG 1700 ..... Geographic Information Science I 3

3

Second Semester:

GEOG 2700 ..... Geographic Information Science II 3
GEOG 2730 ..... Remote Sensing 3

6

Third Semester:

GEOG 2710 ..... Spatial Data Acquisition and Management 3
GEOG 2750 ..... Spatial Analysis and Modeling 3

6

Fourth Semester:

GEOG 2760 ..... Project Management in Geospatial Technology 3
GEOG 2780 ..... Geospatial Technology in Internship/Seminar 2

5

Certificate Total: 20

Associate of Technical Studies Degree

The Associate of Technical Studies (ATS) degree program is designed to accommodate associate degree candidates whose careers and career preparation lie in fields of concentration other than those offered by Lakeland. It permits students to have college credit awarded for occupationally related education and training which may have been obtained outside the traditional college sector.

Admission to associate of technical studies degree candidacy is by application. Students interested in any ATS program should contact the ATS Counselor in the Counseling Center.

Degree programs exist in the following areas:

Computer Information Technology (9720)

The Associate of Technical Studies Degree in Computer Information Technology prepares or upgrades the graduate for career objectives requiring more than one computer-related specialization. Specializations can be combined from within, but not limited to, areas such as computer network support, computer user support, data information analysis, software design and development, web content design, and media studies. Available courses include those that prepare for industry certification from Oracle, Microsoft, CompTIA, RedHat, and Cisco. In addition to employment opportunities, students have the option to continue their education beyond the two-year associate degree program by enrolling in four-year programs at local universities.

Culinary Arts Technology (9730)

The Culinary Arts Technology Program is offered in collaboration with the International Culinary Arts and Sciences Institute (ICASI). Students who receive the certificate in Culinary Arts awarded by the International Culinary Arts and Sciences Institute (ICASI) are awarded 30 semester credit hours. The balance of the ATS program consists of 31 semester hours of general education, basic, and related core courses that are offered by Lakeland. See page 181 for more information and curriculum requirements.

Electrical Construction Technology (9712)

The Electrical Construction Technology program is a five-year Associate of Technical Studies (ATS) degree program offered in collaboration with the International Brotherhood of Electrical Workers (IBEW Local 673). See pages 177-178 for more information and curriculum requirements.

Electrical Technology (9710)

This program is designed for students holding a State of Ohio apprenticeship certificate as an industrial maintenance electrician or in a related area. Certificate holders shall be granted up to 24 semester credit hours towards the associate degree; the balance of the program shall consist of technology courses and general requirements specified by the Ohio Board of Regents.

Industrial Welding (9714)

The Associate of Technical Studies degree in Industrial Welding provides courses for welding certification and includes courses to prepare the graduate for being a welding supervisor or manager. See pages 179-180 for more information and curriculum requirements.

Nuclear Medicine (9760)

This is a cooperative program with the Nuclear Medicine Institute (NMI) at the University of Findlay, Findlay, Ohio. Students complete a core curriculum at Lakeland prior to acceptance at NMI.

Radiologic Technology (9770)

This program is available to students who have completed a two-year hospital based radiologic technology program accredited by the Joint Review Committee on Education in Radiologic Technology. Applicants to the program must be certified by the American Registry of Radiologic Technologists.

Tool and Die Technology (9790)

This program is designed for students holding a State of Ohio apprenticeship certificate in machine tools or a related area. Certificate holders shall be granted up to 24 semester credit hours towards the associate degree; the balance of the program shall consist of technology courses and general requirements specified by the Ohio Board of Regents.

Associate of Technical Studies Degree Requirements

Students must earn a minimum of 20 credit hours in courses at Lakeland and maintain a 2.0 minimum grade point average (GPA). The minimum number of credits required for graduation is 60 semester credit hours. Since the Associate of Technical Studies (ATS) degree is a technical degree, students must also satisfy all curricular components of technical education programs as currently defined by the Ohio Board of Regents and Lakeland Community College.

Those standards require:

1. A minimum of 30 semester credit hours in technical education.
2. A minimum of 30 semester non-technical credit hours.
   A. Minimum 15 credit hours of general studies
      1. ENGL 1110 or 1111 (3 credits)
      2. College-level mathematics (minimum 3 credits)
      3. 3 credits from each of two of the following categories:

         Arts and Humanities (see list below)

         Social and Behavioral Sciences (see list below)

         Natural Sciences (see Transfer Module)
      4. Additional 3 credits from item 2 above ***OR*** item 3 above ***OR*** ENGL 1120 ***OR*** COMM 1000
   B. Minimum additional 15 non-technical credit hours.
      1. FYEX 1000 First Year Experience - 1 credit
      2. Additional 14 credits from section A above and/or other general studies courses and/or basic/related/foundational courses.

Students must meet with a counselor to confirm requirements for their specific ATS degree.

Arts and Humanities: minimum 3 credits
ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 2000, 2500, PHOT 1000

Social and Behavioral Sciences: minimum 3 credits
ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Associate of Technical Studies Degree

Applied Studies - Computer, Design and Engineering Technologies

Computer Information Technology (9720)

The Associate of Technical Studies Degree in Computer Information Technology prepares or upgrades the graduate for career objectives requiring more than one computer-related specialization. Specializations can be combined from within, but not limited to, areas such as computer network support, computer user support, data information analysis, software design and development, web content design, and media studies. Available courses include those that prepare for industry certification from Oracle, Microsoft, CompTIA, RedHat, and Cisco. In addition to employment opportunities, students have the option to continue their education beyond the two-year associate degree program by enrolling in four-year programs at local universities.

The student will be required to complete a sequence of IT core courses which will fulfill the necessary prerequisites before taking additional technical courses. Students will then select a flexible choice of additional technical courses in the format of specializations with an Information Technology & Computer Science/ATS faculty advisor.

Admission requirements include the creation of an individualized degree plan in conjunction with and approved by at least two Information Technology & Computer Science faculty members. Courses taken prior to approval of the degree plan may or may not be approved for inclusion in this degree program.

Required Technical Courses:

Core IT courses:

ITIS 1005 ..... Computers and Information Processing 3
ITIS 1115 ..... Internet Technologies and Concepts 2
OR
ITON 1205 ..... Network+ and Networking Essentials 2
OR
CNET 1100 ..... Cisco Networking Technology I 2
ITON 1050 ..... Using Microsoft Windows 7 1
OR
ITON 1060 ..... Using Microsoft Windows 8 1
ITDB 1400 ..... Introduction to SQL 2
OR
ITDB 1406 ..... Microsoft SQL Concepts 2
OR
ITDB 1430 ..... Microsoft Access Relational Database 3
ITCS 1010 ..... Programming Logic 3
ITIS 2015 ..... Information Technology Project Management 3

Core Technical Credits: 14-15

Additional approved technical courses selected from within at least two of the following areas:

Programming and Computer Science (ITCS)

Database (ITDB)

Operating Systems and Networking (ITON)

Information Systems (ITIS)

Cisco Network Infrastructure (CNET)

CompTIA A++ (CPET)

Media Technology (MDIA)

Additional technical Credits: 15-16
Total Required Technical Course Credits: 30

Required Non-Technical Courses:

General Studies Courses:

ENGL 1110* .....English Composition I (A) 3

OR

ENGL 1111 .....English Composition I (B) 4

MATH 1600 or higher** 3

Choose course(s) from the Arts and Humanities Electives list. 3

Choose course(s) from the Natural Sciences Electives list. 3

Choose course(s) from the Social and Behavioral Sciences Electives list. 3

General Studies Credits: 15

Basic/Related Courses:

BUSM 1300.....Introduction to Business.....3

BUSM 2400.....Business Communication.....3

FYEX 1000.....First Year Experience.....1

Additional approved courses selected from the following: 8

Accounting (ACCT)

Business Management and Marketing (BUSM)

Basic/Related Credits: 15

Total Required Non-Technical Course Credits: 30

Total Credit Hours: 60

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

***Students planning to transfer to a four-year college should take a sequence of math as advised by their counselor.*

Natural Sciences Electives: minimum 3 credits

CHEM 1050.....Chemistry in the Everyday World 3

PSCI 1300 .....Earth Science 3

PSCI 1400 .....Introduction to Meteorology 3

Any other Natural Sciences laboratory course included in the Transfer Module.

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

Social and Behavioral Science Electives: minimum 3 credits

ANTH 1160; ECON 1150, 2500, 2600; GEOG 1500, 1600, 2500; HIST 1150, 1250, 2150, 2250; POLS 1300, 2500; PSYC 1500; SOCY 1150

Electrical Construction Technology (9712)

The Electrical Construction Technology program is a five-year Associate of Technical Studies (ATS) degree program offered in collaboration with the International Brotherhood of Electrical Workers (IBEW Local #673). This program combines traditional coursework in communications, mathematics, physics, economics, and computers with technical courses and work experience. Graduates may work in residential, commercial and industrial construction as skilled wireman and in all aspects of the electrical and teledata industry. Admission is by application, competitive testing, and interviews with the IBEW Local #673.

Students must meet specific admission requirements for this program. Interested students should contact the director of admissions or the Counseling Office for details about applying for admission to the program.

First Semester:

ECTA 1000	Electrical Construction Technology IA	3
ENGR 1000	Introduction to Engineering Technology	2
FYEX 1000	First Year Experience	1
		6

Second Semester:

ECTA 1010	Electrical Construction Technology IB	3
MATH 1001	Introduction to Technical Mathematics	4
		7

Third Semester:

ECTA 1200	Electrical Construction Technology IIA	3
MATH 1101	Technical Mathematics I	4
		7

Fourth Semester:

ECTA 1210	Electrical Construction Technology IIB	3
ENGL 1110*	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	
MATH 1201	Technical Mathematics II	4
		10

Fifth Semester:

ECTA 2300	Advanced Electrical Construction Technology IA	3
ENGL 1121	English Composition II - Technical Focus	3
		6

Sixth Semester:

ECTA 2310	Advanced Electrical Construction Technology IB	3
PHYS 1100	Applied Physics I	3
		6

Seventh Semester:

ECTA 2400	Advanced Electrical Construction Technology IIA	3
ECON 1150	Basic Economics	3
		6

Eighth Semester:

ECTA 2410	Advanced Electrical Construction Technology IIB	3
HUMX 1100	Introduction to Humanities	3
		6

Ninth Semester:

COMM 1100	Effective Interpersonal Communication	3
ECTA 2500	Instrumentation and Testing A	3
		6

Tenth Semester:

ECTA 2510	Instrumentation and Testing B	3
PSYC 1500	Introduction to Psychology	3
		6

Program Total: 66

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Electrical Construction Certificate (4222)

ECTA 1000	Electrical Construction Technology IA	3
ECTA 1010	Electrical Construction Technology IB	3
ECTA 1200	Electrical Construction Technology IIA	3
ECTA 1210	Electrical Construction Technology IIB	3
ECTA 2300	Advanced Electrical Construction Technology IA	3
ECTA 2310	Advanced Electrical Construction Technology IB	3
ECTA 2400	Advanced Electrical Construction Technology IIA	3
ECTA 2410	Advanced Electrical Construction Technology IIB	3
ECTA 2500	Instrumentation and Testing A	3
ECTA 2510	Instrumentation and Testing B	3

Certificate Total: 30

Industrial Welding (9714)

The Associate of Technical Studies degree in Industrial Welding provides courses for welding certification and includes courses to prepare the graduate for being a welding supervisor or manager. On site instruction can be accomplished in a 15-week period by successfully completing both Lincoln Electric's Comprehensive Welding Program and Lakeland's WELD 1020. All other course credits may be obtained through online courses and credit by certification.

Required Technical Courses:
Required welding instruction courses:

Comprehensive Lincoln Electric Welding Program

OR the following four courses:

WELD 1220	Oxyfuel Gas Welding	2
WELD 1240	Stick Welding	2
WELD 1255	FCAW and GMAW (MIG/MAG) Welding	3
WELD 1265	GTAW (TIG) Welding	3
		10

Required shop and safety courses:

WELD 1020	Weld Shop Fundamentals	6
CIVT 2025	Safety in Construction	2
OR		
OSHA 30-Hour General Industry Outreach Training		
OR		
OSHA 30-Hour Construction Industry Outreach Training		
		8

Required welding courses:
NOTE: *Students who have current and verifiable certificates can receive credit by certification for the corresponding courses.*

WELD 1810	AWS D1.1 - 3G 7018 Certification Preparation	1
WELD 1820	AWS D1.1 - 3G GMAW-P Certification Preparation	1
WELD 1830	AWS D1.1 - 3G FCAW-G Certification Preparation	1
WELD 1840	AWS D1.1 - 3G FCAW-S Certification Preparation	1
WELD 1850	AWS D1.1 ' GTAW MS 3F Certification Preparation	1
WELD 1855	AWS D1.2 ' GTAW AL 3F Certification Preparation	1
WELD 1860	AWS D1.6 ' GTAW SS 3F Certification Preparation	1
WELD 1865	AWS D1.1 - 4G 7018 Certification Preparation	1
WELD 1870	AWS D1.1 - 4G GMAW-P Certification Preparation	1
WELD 1875	AWS D1.1 - 4G FCAW-G Certification Preparation	1
WELD 1880	AWS D1.1 - 4G FCAW-S Certification Preparation	1
WELD 2020	ASME - 6G 6010 root 7018 out SMAW Certification Preparation	1
OR		
WELD 2025	API 1104 Certification Preparation	1
		12

Credit hours for required technical courses: 30

Required Basic and Related Courses:

BUSM 1300	Introduction to Business	3
BUSM 2000	Principles of Management	3
BUSM 2200	Organizational Behavior	3
FYEX 1000	First Year Experience	1
		10

Required General Studies Courses:

COMM 1000 ..... Effective Public Speaking 3
OR
COMM 1100 ..... Effective Interpersonal Communication
ECON 2600 ..... Principles of Microeconomics 3
ENGL 1110 ..... English Composition I (A) 3
OR
ENGL 1111 ..... English Composition I (B)
ENGL 1121 ..... English Composition II - Technical Focus 3
OR
MECT 1150 ..... Technical Communications
MATH 1001 ..... Introduction to Technical Mathematics 4
OR the following two (2) courses
MATH 1040 ..... Applied Business Mathematics
MATH 1050 ..... Mathematics of Finance
PHYS 1550 ..... Everyday Physics 3
Choose course(s) from the Arts and Humanities Electives list. 3

22

Total Credit Hours: 62

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000; PHOT 1000

FCAW and GMAW (MIG/MAG) Welding Certificate (4329)

NOTE: No prior welding experience is necessary for this course.
WELD 1255 ..... FCAW and GMAW (MIG/MAG) Welding 3

Certificate Total: 3

GTAW (TIG) Welding Certificate (4330)

NOTE: No prior welding experience is necessary for this course.
WELD 1265 ..... GTAW (TIG) Welding 3

Certificate Total: 3

Oxyfuel Gas Welding and Cutting Certificate (4325)

NOTE: No prior welding experience is necessary for this course.
WELD 1220 ..... Oxyfuel Gas Welding 2

Certificate Total: 2

Pipe Welding Certificate (4331)

NOTE: WELD 2010 has a prerequisite of WELD 1240 or WELD 1810 or AWS D1.1 - 3G 7018 Certification or WELD 1865 or AWS D1.1 - 4G 7018 Certification or graduation from Lincoln Electric's Basic Plate and Sheet Metal course or Pipe Welding course.
WELD 2010 ..... Pipe Welding 3

Certificate Total: 3

Stick Welding Certificate (4326)

NOTE: No prior welding experience is necessary for this course.
WELD 1240 ..... Stick Welding 2

Certificate Total: 2

Culinary Arts Technology (9730)

The culinary arts technology program consists of culinary technical core courses and general education basic and related courses. The degree program is operated jointly by Lakeland and the International Culinary Arts and Sciences Institute (ICASI).

Students who successfully complete the ICASI Culinary Arts Program required courses and receive the ICASI Culinary Arts Advanced Techniques Diploma are awarded 30 semester credit hours which can be applied towards an Associate of Technical Studies (ATS) degree in Culinary Arts technology. The ATS degree requires that the students complete a minimum of 30 additional credit hours in prescribed general education, basic and related core courses at Lakeland.

Culinary Arts required courses are delivered by ICASI in Chesterland, Ohio, and the tuition, fees, and payment and refund schedules are determined by ICASI. General education, basic and related course requirements are delivered by Lakeland Community College. Tuition, fees, and payment and refund schedules for Lakeland courses are set by the college.

ICASI required courses:

* CA 1100	Culinary Arts Basic Techniques 1	
* CA 1200	Culinary Arts Basic Techniques 2	
* CA 2100	Culinary Arts Advance Techniques 1	
* CA 2200	Culinary Arts Advanced Techniques 2	
* CA 2300	Baking and Pastry Techniques	
* LS 1100	Sanitation	
* LS 2100	Nutrition and Healthy Cooking	
* LS 2200	Food Service Management 1	
* LS 2300	Food Service Management 2	
* CA 2400	ICASI Student Cafe	
* CA 2500	Culinary Arts Externship	
		30 Semester Credit Hours

Lakeland General/Basic/Related Courses:

ACCT 1100	Introduction to Financial Accounting	4
BUSM 1800	Essentials of Management and Supervision	3
COMM 1100	Effective Interpersonal Communication	3
ECON 1150	Basic Economics	3
ENGL 1110	English Composition I (A)	3
OR		
ENGL 1111	English Composition I (B)	4
ENGL 1120	English Composition II	3
FYEX 1000	First Year Experience	1
HLTH 1300	Nutrition and Family Health	2
MATH 1600	Survey of College Mathematics	3
Choose course(s) from the Arts and Humanities Electives list.		3
Choose course(s) from related electives list.		3
		31
		Program Total: 61

**English course selection is based on placement test results (ENGL 1111 is 4 credits, only 3 credits apply to the degree).*

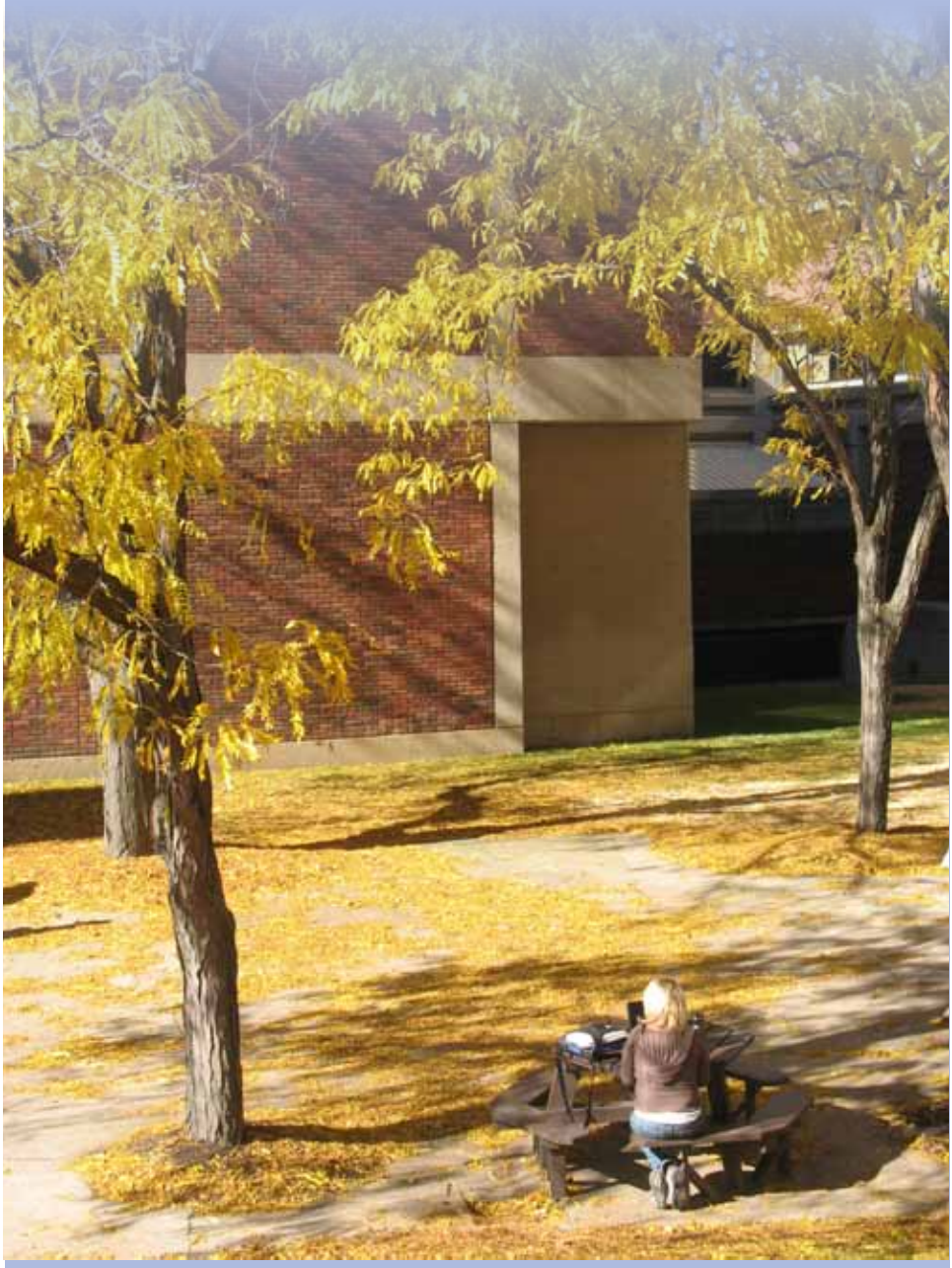
Arts and Humanities Electives: minimum 3 credits

ARTS 1120, 2220, 2230; ENGL 2250, 2260, 2280, 2290; HUMX 1100, 1200; MUSC 1200, 1215, 1800, 2200, 2250; PHIL 1500, 2000

Related Electives: minimum 3 credits

BUSM 1300	Introduction to Business	3
BUSM 1330	Business Ethics	3
BUSM 1400	Professional Personal Selling	3
BUSM 2100	Business Law I	3
ITIS 1005	Computers and Information Processing	3

Course Descriptions



Lakeland
COMMUNITY COLLEGE

Course Descriptions

COURSE DESCRIPTIONS

A course which carries a prerequisite designation does so as an advisement to students that the course is either a continuation of the cited prerequisite course or that it is built upon and presumes the content of the prerequisite.

ACCOUNTING

ACCT 1100 Introduction to Financial Accounting (TAG) 4 Credits

This course examines financial accounting and reporting with emphasis on analysis and interpretation from a user perspective. The course covers the accounting principles underlying the accounting cycle, income measurement using accrual accounting, asset valuation, ratio analysis, and cash flow. Students will study the major components of the financial statements included in the corporation annual report. (4 contact hours)

ACCT 1200 Introduction to Managerial Accounting (TAG) 3 Credits

Prerequisite: ACCT 1100

This course examines managerial accounting tools and techniques used by decision makers to help make an organization's operations more effective and efficient. Students will apply basic managerial accounting concepts to problems of management planning, control, decision making, and performance evaluation. Topics covered include job order costing and analysis, process costing and analysis, activity-based costing and analysis, variable costing, cost behavior and cost volume-profit analysis, budgeting, standards cost, relevant costing, and capital budgeting. (3 contact hours)

ACCT 1270 Financial Analysis Using Spreadsheets 3 Credits

Prerequisite: ACCT 1100 or FINN 1300

This course emphasizes the development of analytical skills for financial problem solving and analysis of business financial relationships, using the spreadsheet as the basic tool. The course involves the study of how spreadsheets can be used as a decision making tool by accountants and managers. Students should have access to a computer outside of class. Open labs will be available for students who do not otherwise have access to an adequate computer. (4 contact hours: 2 lecture, 2 lab)

ACCT 2100 Intermediate Accounting I 4 Credits

Prerequisite: ACCT 1200

This course involves an in-depth study of financial accounting practice and theory regarding the basic financial statements, compound interest and present value concepts, and accounting for current and long-term assets. The course also involves the study of selected pronouncements of the Financial Accounting Standards Board and the Accounting Principles Board. (4 contact hours)

ACCT 2110 Managerial Accounting: Cost 4 Credits

Prerequisite: ACCT 1200

This course provides an introduction to cost accounting methods and the determination of costs through job order, process, and activity-based cost accounting procedures for materials, labor, and overhead. (4 contact hours)

ACCT 2120 Auditing Theory and Practice 3 Credits

Prerequisite: MATH 2130 (can be taken concurrently) or permission of instructor, ACCT 1200

This course introduces the auditing concepts and techniques utilized by the internal auditor and the independent public accountant. Topics include professional ethics, legal liability, internal control, statistical sampling, reports, and auditing standards and procedures. (3 contact hours)

ACCT 2130 Advanced Topics in Accounting 3 Credits

Prerequisite: ACCT 2100

This course introduces the accounting for business combinations, as well as foreign currency translation issues. Other topics include accounting for nonprofit and government organizations. (3 contact hours)

ACCT 2140 Ethics and Professional Standards for Accounting 1 Credit

This course is designed to help students integrate ethical reasoning, integrity, objectivity, independence, and other core values into their development as professional accountants. It will provide them with a foundation of the ethical and professional standards currently used by the accounting profession and introduce them to the American Institute of Certified Public Accountants' Code of Professional Conduct and Rules of Conduct. Students will study real-world situations and follow the required rules to make ethical decisions. (1 contact hour)

ACCT 2150 Accounting Information Systems **3 Credits**

Prerequisite: ACCT 1100 or FINN 1300

This course provides an analysis of how an accounting information system processes revenue, expenditure, production, and financial data into useful financial information and reports. Students will use computers and an integrated accounting information software package to apply the basic principles and procedures of accrual accounting, including the general ledger, accounts receivable, accounts payable, invoicing, payroll and inventory. Students should have access to a computer outside of class. Open labs will be available for students who do not otherwise have access to an adequate computer. (4 contact hours: 2 lecture, 2 lab)

ACCT 2200 Intermediate Accounting II **4 Credits**

Prerequisite: ACCT 2100

This course is a continuation of ACCT 2100 Intermediate Accounting I involving an in-depth study of financial accounting practice and theory regarding current and long-term liabilities, stockholders' equity, earnings per share, inter-period income tax allocation, post-retirement benefits, and long-term leases. The course also involves the study of selected pronouncements of the Financial Accounting Standards Board and the Accounting Principles Board. (4 contact hours)

ACCT 2210 Managerial Accounting: Finance **4 Credits**

Prerequisite: ACCT 2100 or ACCT 2110

This course introduces students to accounting and financial procedures for cost planning and control. Students will apply cost and profit, break-even, capital budgeting, ratio, and differential cost analysis for managerial and business decisions. (4 contact hours)

ACCT 2390 Tax Accounting **4 Credits**

Prerequisite: ACCT 1200

This course introduces current federal income tax law and regulations relating to businesses and individuals. Topics include personal exemptions, personal itemized deductions, income recognition, allowable personal/business deductions, depreciation, tax credits, the alternative minimum tax, capital gains and losses, and special partnership and corporate tax issues. The lab portion of the course provides students with hands-on tax preparation experience. (5 contact hours: 3 lecture, 2 lab)

AMERICAN SIGN LANGUAGE

ASLI 1100 Introduction to American Sign Language I **4 Credits**

This introductory course focuses on developing an understanding of Deaf and nonverbal populations and ways to communicate effectively with them using American Sign Language. The course introduces fingerspelling/manual alphabet and basic grammar and vocabulary. (4 contact hours)

ASLI 1200 Introduction to American Sign Language II **4 Credits**

Prerequisite: ASLI 1100 or proficiency test

This course builds on the knowledge and skills developed in ASLI 1100 Elementary American Sign Language I, focusing on increasing speed, fluency, vocabulary, receptive skills and knowledge of grammatical structures. It introduces proper translation of English idiomatic expressions and colloquialisms. (4 contact hours)

ASLI 1400 Fingerspelling **3 Credits**

Prerequisite: ASLI 1100 or proficiency test or permission of instructor

This course provides concentrated instruction and practice of fingerspelling at increasing levels of complexity including sign names, loaned signs, expressive use, receptivity, various sign systems, and numbering systems. (3 contact hours)

ASLI 1550 Deaf History and Culture **3 Credits**

This introductory course surveys the history, structure, power interactions, and culture of the Deaf community and its impact on hearing and non-hearing populations. Experience with American Sign Language is not necessary. (3 contact hours)

ASLI 1700 Deaf Literature **3 Credits**

This course introduces students to the literary work of and about the Deaf community. The literary work addresses the effects of history, social systems, and individual experiences on Deaf literature and its subsequent impact on hearing populations and Deaf culture. (3 contact hours)

ASLI 1800 American Sign Language I **4 Credits**

Prerequisite: ASLI 1200 or proficiency test or permission of instructor

In this intermediate level course, students review the grammatical features of American Sign Language (ASL) and further develop communicative functions using ASL. They learn common English idiomatic expressions, refine signing and fingerspelling skills, and increase receptivity skills. Students will observe the norms of Deaf culture in class. They may not use any voicing. Instead, all communication will be by body language and ASL vocabulary and structure. (4 contact hours)

ASLI 1830 American Sign Language: Discourse **3 Credits**

Prerequisite: ASLI 1800 or permission of instructor

This course provides for ongoing interactions using American Sign Language (ASL). Students will conduct interviews and prepare presentations in ASL. The course develops the expressive and receptive skills of each student. Students will observe the norms of Deaf culture in class: they may not use any voicing; instead, communication will be by body language and ASL structure only. (3 contact hours)

ASLI 1850 American Sign Language II **4 Credits**

Prerequisite: ASLI 1800 or permission of instructor

In this intermediate level course, students review and further develop communicative functions using American Sign Language (ASL). The course reviews English idiomatic expressions, and students will learn common ASL idioms while further developing expressiveness, fingerspelling, and receptivity skills. Students will observe the norms of Deaf culture in class. They may not use any voicing. Instead, all communication will be by body language and ASL structure and vocabulary. (4 contact hours)

ASLI 2700 Resources Concerning the Deaf Community **3 Credits**

This course introduces students to organizations and other resources available within the local and national Deaf community, parent organizations, community agencies, advocacy resources, journals, and Deaf community publications. (3 contact hours)

ASLI 2750 Applied Issues Concerning the Deaf Community **3 Credits**

Prerequisite: ASLI 1550 (can be taken concurrently)

This course examines key issues concerning the Deaf community including ethics, paternalization, and deafness as difference versus deafness as a disability. The course includes a study of the parallels between issues of diversity such as gender and race with those of deafness. (3 contact hours)

ANTHROPOLOGY

ANTH 1160 Introduction to Cultural Anthropology **(TAG) 3 Credits**

This course introduces students to the field of anthropology and provides them with an understanding of anthropological concepts and theories. It introduces the comparative study of culture across time and place and focuses on the adaptability and diversity of humans within the family, religious, economic, and political systems. The course includes the process of cultural change and group survival within the modern world system. (3 contact hours)

ART

ARTS 1110 Art Fundamentals for the Classroom **3 Credits**

This studio course is for non-art majors with little or no background in studio arts and students interested in early childhood art. Students will explore the art process through hands-on application of the art elements, media, and materials used in the making of art. (3 contact hours)

ARTS 1120 Art Appreciation **(TM) 3 Credits**

This lecture course provides a general study of the visual arts by exploring the various art historical periods and the media, materials, and techniques used by the artist. (3 contact hours)

ARTS 1130 Art Drawing I **(TAG) 3 Credits**

This studio course provides a basic foundation to drawing with emphasis on perceptual development, structural representation, and individual expression. Students will explore the creation of graphic spatial illusions through a variety of art elements, media, and tools. (6 contact hours: 6 lab)

ARTS 1135 Art Drawing II **3 Credits**

Prerequisite: ARTS 1130 or permission of instructor

This studio course further explores the visual language, media, and tools the artist uses in creating graphic spatial illusions. The course places emphasis on perceptual development, structural representation, individual expression, composition, and control of media to satisfy specific visual problems. (6 contact hours: 6 lab)

ARTS 1140 Life Drawing I **(TAG) 3 Credits**

Prerequisite: ARTS 1130 or permission of instructor

This studio course explores the human form: its structure and character in visual translation. It places emphasis on the forming of gestural synthesis, on sound structural representation, and control of appropriate art media. (6 contact hours: 6 lab)

ARTS 1145 Life Drawing II **3 Credits**

Prerequisite: ARTS 1140 or permission of instructor

This studio course further explores the human form: its structure, character, and expressive potential in visual translation. The course places emphasis on comprehensive representation, expressive characteristics, and subjective interpretations in a variety of art media. (6 contact hours: 6 lab)

ARTS 2220 Survey of Art I **(TM, TAG) 3 Credits**

This lecture course provides a comprehensive exploration of stylistic developments in painting, sculpture, and architecture from prehistory to the Renaissance. The course places emphasis on the relationship of the visual arts to their cultural context. (3 contact hours)

ARTS 2230 Survey of Art II **(TM, TAG) 3 Credits**

This lecture course provides a comprehensive exploration of stylistic developments in painting, sculpture, and architecture from the Renaissance to the present. The course places emphasis on the relationship of the visual arts to their cultural context. (3 contact hours)

ARTS 2250 Painting I **(TAG) 3 Credits**

Prerequisite: ARTS 1130 or permission of instructor

This studio course explores the language of color, its basic visual characteristics, and the process, materials, and techniques of opaque media painting. (6 contact hours: 6 lab)

ARTS 2255 Painting II **3 Credits**

Prerequisite: ARTS 2250 or permission of instructor

This studio course continues the exploration of the language of color, investigating its mood, expressive characteristics and subjective application in visual translation, and the process, materials and techniques of opaque media painting. (6 contact hours: 6 lab)

ARTS 2260 Ceramics I **(TAG) 3 Credits**

This studio course explores ceramic materials, tools and techniques. It applies the fundamentals of pinch, coil and slab methods of fabrication to functional and nonfunctional clay forms. Students will explore studio practices of preparing clay, glazes, kiln loading, and firing. (6 contact hours: 6 lab)

ARTS 2265 Ceramics II **3 Credits**

Prerequisite: ARTS 2260 or permission of instructor

This studio course explores basic wheel throwing techniques and the designing and making of functional and creative nonfunctional clay forms. Students will apply studio practices of preparing clay, glazes, kiln loading, and firing. (6 contact hours: 6 lab)

ARTS 2275 Jewelry/Metals I **3 Credits**

This studio course explores basic design and techniques of fabrication (soldering, surface texture, lost wax casting, and enameling) as applied to jewelry and small metal objects. (6 contact hours: 6 lab)

ARTS 2276 Jewelry/Metals II **3 Credits**

Prerequisite: ARTS 2275 or permission of instructor

This studio course explores advanced techniques in design and the fabrication of jewelry and small metal objects. Students will apply enameling, lost wax casting, soldering, surface texture, and creative design concepts. (6 contact hours: 6 lab)

ARTS 2277 Jewelry/Metals III **3 Credits**

Prerequisite: ARTS 2276 or permission of instructor

This studio course explores advanced techniques in the design and fabrication of jewelry and small metal objects. Students will apply hydraulic die forming, fold forming, repoussage, fabrication, small tool making, advanced surface textures, surface embellishment, and creative design concepts. The course will provide studio time for investigation and creation of samples, resulting in the design and production of at least three completed projects. (6 contact hours: 6 lab)

ARTS 2290 Sculpture I **(TAG) 3 Credits**

This studio course provides a basic introduction to sculptural materials, tools and fabrication techniques in creating three-dimensional forms. Students will explore various methods of forming clay, plaster, wood, plastic, and metals. (6 contact hours: 6 lab)

ARTS 2295 Sculpture II **3 Credits**

Prerequisite: ARTS 2290 or permission of instructor

This studio course continues the exploration of techniques of fabricating three-dimensional forms. The course places emphasis on proper studio practices, creative design, and the process of casting metal in the foundry. (6 contact hours: 6 lab)

ARTS 2300 Watercolor Painting I **3 Credits**

Prerequisite: ARTS 1130 or permission of instructor

This studio course explores various basic transparent media techniques, materials and processes associated with watercolor painting. The course places emphasis on developing proper studio practices, the control and handling of media and tools, and basic color theory. (6 contact hours: 6 lab)

ARTS 2305 Watercolor Painting II **3 Credits**

Prerequisite: ARTS 2300 or permission of instructor

This studio course continues the exploration of transparent media techniques and their application to the rendering of natural subjects, textures, and light. The course places emphasis on more comprehensive experimentation and the creation of effective watercolor compositions. (6 contact hours: 6 lab)

BIOLOGY

BIOL 1010 Introductory Biology: Cells, Genetics and Evolution **(TM) 3 Credits**

This course introduces basic chemical and cellular levels of life, provides an overview of genetics and evolution, and describes the major taxonomic categories of living organisms. Major topics include basic inorganic chemistry, biochemistry, cell structure and function, energy flow through cells, Mendelian genetics, DNA and proteins, and evolution. This is a non-lab course intended for non-science majors. (3 contact hours)

BIOL 1020 Introductory Biology: Organismic Biology and Ecology **(TM) 3 Credits**

This course provides an introduction to the organismic biology of plants and animals, basic ecology, and the effects of human disturbance on the Earth's life support systems. Major topics include plant and animal structure and function, population and community ecology, and environmental impacts. This is a non-lab course intended for non-science majors. (3 contact hours)

BIOL 1030 Environmental Issues and Solutions **3 Credits**

This course examines the major environmental issues facing the world including pollution, population growth, soil erosion, destruction of forests and other natural areas, climate changes and other environmental impacts induced by human activity. It introduces a wide spectrum of viewpoints on what constitutes an environmental problem, as well as the controversies about appropriate remedial measures. The course analyzes problems and emphasizes the successful search for solutions. It develops a number of themes across a broad range of environmental issues including sustainability, the global economy, the global environment, short-term versus long-term gains, and the trade-off involved in balancing environmental problems and solutions. This non-laboratory course is intended for non-science majors. Because of similarities in content, students who have taken BIOL 1170 Ecology and Environmental Biology should not take this course. (3 contact hours)

BIOL 1140 Human Biology **(TM) 3 Credits**

This course introduces the fundamentals of human structure and function at the chemical, cellular, tissue, organ, and system levels. Specific topics include the chemistry of life, cell structure and function, patterns of inheritance and human genetics, and the structure and functions of the body systems. The course includes the study of homeostasis, tissues, and the integumentary, muscular, nervous, endocrine, cardiovascular, respiratory, immune, digestive, urinary, and reproductive systems. This is a non-lab course intended for non-science majors. (3 contact hours)

BIOL 1150 Plant Biology **(TM) 4 Credits**

This course provides basic foundations in organismic biology related to plants. It includes the cellular basis of plants, a study of plant cells and tissues, their structure and function, and basic energy relationships of cells. Additionally, the course emphasizes structure, function, taxonomy, ecology, and importance of plants to humans. Lab activities focus on experimental greenhouse studies, observations of plant morphology, and identification of local plant species. This course is intended for non-science majors. (6 contact hours: 3 lecture, 3 lab)

BIOL 1160 Animal Biology **(TM) 4 Credits**

This course provides an introduction to organismic biology related to animals. It includes animal cell structure and function, biodiversity and evolution of the animal kingdom, and homeostasis and the organization of the animal body. Additional specific topics include animal tissues; skeletal, muscular, digestive, respiratory, nervous, excretory, and reproductive organs and systems; nutrition and energy flow; importance of animals to humans; inheritance; and behavior. This course includes both lecture and laboratory components and is intended for non-science majors. (6 contact hours: 3 lecture, 3 lab)

BIOL 1170 Ecology and Environmental Biology **(TM) 4 Credits**

This course provides a framework for understanding basic ecology and environmental science. It gives an introduction and overview of ecological concepts at the population, community, ecosystem, and biosphere levels. Students will examine environmental impacts and solutions in the areas of air, water, and soil pollution; human population growth; energy use and alternatives; and biodiversity and conservation. The course has both a lecture and laboratory component and is intended for non-science majors. Because of similarities in course content, students who have taken BIOL 1030 Environmental Issues and Solutions should not take this course. (6 contact hours: 3 lecture, 3 lab)

BIOL 1180 Tropical Biology **4 Credits**

This course introduces the concepts of ecology and organismic biology through an intensive field oriented approach. Students examine both tropical rainforests and coral reefs from the organismic, population, community, and ecosystem levels through hands on field activities, lectures, and Internet activities. The course is conducted at a field station in a Costa Rican, Belizean, Amazonian, Caribbean, or Hawaiian location. Multiple field excursions will introduce students to the biodiversity and conservation of tropical ecosystems, while lecture and laboratory activities will introduce concepts in taxonomy, basic organismic biology and adaptive physiology, and tropical ecosystem processes. This course has both a lecture and laboratory (field) component and is intended for non-science majors or as an elective for science majors. (6 contact hours: 2 lecture, 4 lab)

BIOL 1190 Introduction to Evolutionary Biology **(TM) 4 Credits**

Prerequisite: high school biology or higher

This course provides a framework for understanding the concepts of evolutionary biology. It offers an overview of the subject by focusing on the underlying mechanisms that drive change in biological form and function through natural selection. Students will explore the role of ecology, genetics, and development as modulators of change. Special topics will include origins of life, plant and animal evolution, human evolution, evolution of sex, social and behavioral evolution, and infectious disease, as well as alternative views on origins and the socio-political consequences of this theory. This is an elective biology course intended for both science and non-science major students pursuing degrees in biology, healthcare, behavior, or education. (6 contact hours: 3 lecture, 3 lab)

BIOL 1200 Fundamentals of Biology for the Health Technologies **(TM) 4 Credits**

This course provides an introduction to the concepts and principles of biology for students interested in entering the health technologies programs. Major topic areas include biological chemistry, cellular structure and function, and the basic energy relationships of cells. Additionally, this course includes cell division, molecular biology, genetics and heredity, and early embryologic development. This course has both a lecture and laboratory component. (6 contact hours: 3 lecture, 3 lab)

BIOL 1510 Principles of Biology I **(TM, TAG) 4 Credits**

This course introduces students to the organization of living systems, energy transfer, continuity of life, biodiversity, and classification of living things. The topics include biological history, structure and functions of cells and cellular organelles, cell division, general biochemistry, cellular respiration, photosynthesis, DNA structure and function, protein synthesis, heredity, evolution, animal development, and classification. It also introduces viruses, prokaryotes, Protista, and Fungi. This course has both a lecture and laboratory component. It provides the prerequisite for BIOL 1520 Principles of Biology II and other advanced courses in biology. This course and BIOL 1520 provide a general introduction to the biological sciences for the science major. (6 contact hours: 3 lecture, 3 lab)

BIOL 1520 Principles of Biology II **(TM, TAG) 4 Credits**

Prerequisite: BIOL 1510 or equivalent

This course builds on the concepts introduced in BIOL 1510 Principles of Biology I. It provides an overview of the structural and functional characteristics of animals and plants and the basic concepts of ecology. This course introduces the major animal and plant phyla and examines their taxonomic, evolutionary, and organizational relationships, and their life cycles. Additional topics include animal tissues, organs, and organ systems; the structure and function of vascular plants; and ecology. This course has both a lecture and laboratory component. This course and BIOL 1510 provide a general introduction to the biological sciences for the science major. (6 contact hours: 3 lecture, 3 lab)

BIOL 2210 Anatomy and Physiology I **(TM) 4 Credits**

Prerequisite: high school chemistry or CHEM 1100, high school biology in the last five years; or BIOL 1200

This course introduces the organization of the human body in the context of the unifying concepts of feedback regulation and homeostasis. The course assumes a general knowledge of cell structure and function and begins with a study of tissues and a general introduction to organs and systems. It then provides detailed study of the integumentary, skeletal, muscular, and nervous systems. This course has both a lecture and laboratory component. This course and BIOL 2220 Anatomy and Physiology II provide students with a general introduction to the biology of the human body. All students are strongly encouraged to take BIOL 1200 Fundamentals of Biology for the Health Technologies or BIOL 1510 Principles of Biology I prior to taking this course. (6 contact hours: 3 lecture, 3 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

BIOL 2220 Anatomy and Physiology II **(TM) 4 Credits**

Prerequisite: BIOL 2210

This course continues the study of the human body begun in BIOL 2210 Anatomy and Physiology I. The course examines the relationships between endocrine, cardiovascular, lymphatic, respiratory, digestive, reproductive and urinary body systems along with the regulatory mechanisms which integrate them. The course also includes considerations of nutrient absorption and delivery, metabolism, excretory function, and acid-base balance. This course has both a lecture and laboratory component. This course and BIOL 2210 provide students with a general introduction to the biology of the human body. (6 contact hours: 3 lecture, 3 lab)

BIOL 2700 Microbiology **(TM) 4 Credits**

Prerequisite: BIOL 1520 or BIOL 2210 or admission to the Biotechnology Science program

This course, designed for allied health and biotechnology science students, introduces the study of microorganisms and their impact on human health. It focuses on the interactions between human hosts and microbes as well as microbial cell organization, patterns of growth and metabolism, and identifications of medically important microbes. Topics include bacterial cell structure and function; bacterial growth and reproduction; physical and chemical control methods of microbes; relevant characteristics of medically important bacteria; general characteristics of fungi, protozoa, and viruses, and human diseases caused by these microbes; disease transmission; microbial pathogenesis; host defense mechanisms; antimicrobial drugs; and microbial drug resistance. This course has both a lecture and a laboratory component. (6 contact hours: 3 lecture, 3 lab)

BIOL 2800 Immunology **2 Credits**

Prerequisite: BIOL 1510 or equivalent

This course introduces the principles and applications of immunology for science majors. It provides basic knowledge of the human immune system, including the molecules, cells, and processes involved in the body's defense against infections. Topics include homeostasis, microbial pathogenicity, structures and functions of the immune systems, immunization, monoclonal antibodies, techniques and applications of immunological tests, immunodeficiency and hypersensitivity, transplantation immunology, and cancer immunology. This is a non-laboratory course. (2 contact hours)

BIOL 2900 Special Topics in Biology **2-4 Credits**

These specialized courses provide in-depth examinations of biology concepts at the cellular, ecological, or organismic level, which are not covered in detail elsewhere in the curriculum.

BIOTECHNOLOGY SCIENCE

BIOS 1050 Introduction to Biotechnology Science **3 Credits**

This course introduces students to the field of biotechnology. The course addresses applications of biotechnology to the medical, agricultural, environmental and chemical industries. Discussions will include the safety, ethical, regulatory, and proprietary issues of the application of biotechnology to industry and healthcare. (3 contact hours)

BIOS 1200 Biotechnology Science Lab Skills **5 Credits**

Prerequisite: Biotechnology Science Program entry requirements

This course introduces students to the fundamental knowledge and techniques associated with the operation of a laboratory engaged in biotechnology. The course includes the instruction and application of laboratory mathematics, biostatistics, good laboratory practice, and laboratory safety. Students will record the procedures, data, and analysis of laboratory activities. Students will learn experimental techniques, including reagent preparation, cell culture, filtration, centrifugation, spectroscopy, and microscopy. Students must supply a scientific calculator. (9 contact hours: 3 lecture, 6 lab)

BIOS 1500 Introduction to Biochemistry **4 Credits**

Prerequisite: BIOL 1510, BIOS 1200, CHEM 1500; or permission of instructor

This course introduces students to the chemistry of biological systems. It emphasizes the chemical structures, regulation, biological roles and metabolism of proteins, nucleic acids, carbohydrates, and lipids. Laboratory exercises will focus on basic techniques of isolation and characterization of biomolecules, including separation, chemical reactivity, and kinetics. Students will record experimental procedures, data, and interpretations. (6 contact hours: 3 lecture, 3 lab)

BIOS 1600 Advanced Molecular Separations **4 Credits**

Prerequisite: BIOS 1500 or permission of instructor

This course includes specialized study of the theory and methodology of the separation and some subsequent characterization of biomolecules. Chromatographic techniques discussed and employed will include affinity, thin layer, paper, gas, ion exchange, and High Performance Liquid Chromatography (HPLC). The course emphasizes separation and specific identification of proteins. Students will record experimental procedures, data, and interpretations. (8 contact hours: 2 lecture, 6 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

BIOS 2100 Applied Microbiology **3 Credits**

Prerequisite: BIOL 2700, BIOS 1200; or permission of instructor

This course advances the student's knowledge of microbial metabolism and genetics, with an emphasis on biotechnological applications. Students will manipulate cell growth conditions experimentally for native and genetically altered microbes. The course also covers the genetics of microbial viral pathogens (phage). Students will record experimental procedures, data, and interpretations. (5 contact hours: 2 lecture, 3 lab)

BIOS 2400 Tissue Culture **3 Credits**

Prerequisite: BIOL 2700, BIOS 1200; or permission of instructor

This course introduces students to the establishment, maintenance, characterization, and storage of eukaryotic cell cultures. In the laboratory, students will prepare media, manipulate cells using aseptic technique, characterize ectopically expressed gene products, and catalog cell cultures. The course also addresses monoclonal antibody production. Students will record experimental procedures, data, and interpretations. (5 contact hours: 2 lecture, 3 lab)

BIOS 2500 Recombinant DNA Technology **4 Credits**

Prerequisite: BIOS 1200, BIOS 1500; or permission of instructor

This specialized course includes the basic genetics and technical aspects of introducing foreign and native genes into organisms. The course also addresses molecular diagnostics for healthcare, forensic science, and research purposes. In the laboratory, the students will isolate, characterize, manipulate, and clone nucleic acids. The course emphasizes record-keeping and good laboratory practice. (8 contact hours: 2 lecture, 6 lab)

BIOS 2550 Introduction to Bioinformatics **1 Credit**

Prerequisite: BIOS 2500 or permission of instructor

This course introduces students to the use of computers in the biotechnology laboratory. The course provides basic instruction related to the terminology and use of computers in communicating in the biotechnology industry. The course also provides introductory instruction in the use of applied software packages including: DNA/protein sequence analysis; scientific literature and molecular sequence database manipulation; multiple sequence alignment software; and utility software such as statistical packages and documentation programs. (2 contact hours: 0.5 lecture, 1.5 lab)

BIOS 2600 Bioscience Manufacturing Processes **5 Credits**

Prerequisite: BIOS 2100 or permission of instructor

This course introduces students to the principles and techniques of fermentation and bioprocessing. Laboratory experiments will include food and beverage fermentations; microbial fermentations yielding specific products such as antibiotics or amino acids; and product formation using isolated enzymes. This course also examines the economics and operational factors encountered when producing microbial by-products on an industrial scale. Students will record experimental procedures, data, and interpretations. (9 contact hours: 3 lecture, 6 lab)

BIOS 2700 Internship **5 Credits**

Prerequisite: BIOS 2400 (can be taken concurrently); BIOS 2500, BIOS 2600, BIOS 2800 (must be taken concurrently); or permission of instructor

This specialized course provides students with supervised practical experience in an academic or industrial laboratory engaged in biotechnology. The internship integrates the student's bioscience knowledge and laboratory skills, acquired within the core coursework of the Biotechnology Science program, with job experience representative of an entry-level biotechnology laboratory technician position. (25 contact hours: 25 lab)

BIOS 2800 Biotechnology Science Seminar **1 Credit**

Prerequisite: BIOS 2700 (must be taken concurrently)

This course is a specialized topical course providing students a venue to discuss internship issues, as well as recent biotechnology innovations. The course discusses such issues as non-proprietary internship experiences relating to laboratory practices, governmental regulations, and ethics. Students will research and report on assigned biotechnology-related topics. (1 contact hour)

BUSINESS MANAGEMENT

BUSM 1050 Keyboarding **1 Credit**

This course is designed for students with no previous keyboarding coursework. It introduces the alphabet and punctuation keys and requires learning to key by the "touch" method. (3 contact hours: 3 lab)

BUSM 1060 Keyboarding Skill Development **1 Credit**

Prerequisite: BUSM 1050 or successful completion of one-semester secondary or post-secondary keyboarding course for credit

This course is designed for students who have previous keyboarding coursework but need to increase keyboarding proficiency. The course develops speed and accuracy on the alphabet and punctuation keys. Students may enroll in this course up to two times for credit. (3 contact hours: 3 lab)

BUSM 1300 Introduction to Business **3 Credits**

This course provides an overview of business throughout the world, focusing on the historical development of American business from the early years to the present. It includes major business functions: management, marketing, manufacturing, distribution, financial operations, and human resource management. It also focuses on business ethics, in theory and practice, in today's highly competitive business environment. (3 contact hours)

BUSM 1330 Business Ethics **3 Credits**

This course introduces students to the relevance and importance of ethics in business. It examines ethical considerations and dilemmas facing corporations, managers, and employees and develops ethical decision-making skills with a stakeholder focus. Students will become familiar with business ethics views and theories, corporate social responsibility policies and practices, and the application of sustainability to business decisions. (3 contact hours)

BUSM 1400 Professional Personal Selling **3 Credits**

Prerequisite: BUSM 1300 or permission of instructor

This course is a review of the attributes and behaviors that lead to success in personal selling. It includes the fundamentals of consultative professional selling, including customer and relationship focus, understanding behavioral style, personal development and communications levels, product information, stages of the sales process, presentations, selling services, and managing the sales force. These concepts are appropriate for tangibles, intangibles, and store and field selling. The course includes the use of role playing. (3 contact hours)

BUSM 1500 International Business in a Global Environment **3 Credits**

Prerequisite: BUSM 1300 or permission of instructor

Focusing on the global environment, this course provides students with a fundamental understanding of all major areas of international business. General content areas include international management, finance, economics, marketing, law, operation, import/export sociocultural forces, and strategic planning. Additionally, topical presentations include analysis and discussions of current issues, ethics, international development, and foreign and economic policies as they affect U.S. businesses in the global environment. (3 contact hours)

BUSM 1620 Introduction to Entrepreneurship **3 Credits**

This course explores entrepreneurial opportunities and investigates the various considerations and skills necessary in establishing a small business. Students will learn about the process for conceiving, launching, and developing a business in a competitive market. Topics pertaining to the small business include competitive strategies, ethics, legal issues, financing options, marketing, and the role of the business plan. (3 contact hours)

BUSM 1640 Entrepreneurial Management **3 Credits**

Prerequisite: BUSM 1620

This course explores the entrepreneur's role in the management of a small business. Topics include marketing and promotion, product and supply chain management, human resources management, operations management, and assets management. Students will also address and analyze risk assessment, global opportunities, and current small business topics. (3 contact hours)

BUSM 1700 Principles of E-Business **3 Credits**

Prerequisite: BUSM 1300

This course provides an overview of electronic commerce principles focusing on the management and marketing strategies that make electronic commerce business successful. It includes the business and profit models of e-commerce along with other e-commerce principles including: justification for e-commerce, increasing Web site traffic, legal issues such as payment, taxation, security, and privacy and international e-commerce. (3 contact hours)

BUSM 1800 Essentials of Management and Supervision **3 Credits**

This specialized course includes the study of the skills of planning, organizing, leading, and controlling the operation of organizations through effective communication, human resource practices, problem solving, and decision making. Supervisory and managerial techniques apply to all formal organizations, including for profit and not for profit, private and public, and manufacturing and service. This course for non-majors focuses on supervisory and mid-management skills and includes key concepts from other courses, namely Principles of Management, Organizational Behavior, Human Resource Management, and others which are taken by management majors. Because of similarities in course content, students required to take BUSM 2000 Principles of Management will not receive credit for BUSM 1800. (3 contact hours)

BUSM 2000 Principles of Management **3 Credits**

Prerequisite: BUSM 1300

This advanced course is an in-depth study of the classic management functions of planning, organizing, leading and controlling. It supplies techniques for carrying out each of these functions. Students will participate in extended discussion and practice decision-making and problem-solving techniques. (3 contact hours)

BUSM 2100 Business Law I **(TAG) 3 Credits**

This course provides students with a fundamental understanding of important business law concepts. Content areas include the legal environment and judicial system, the nature and sources of law, administrative law, legal procedures, business torts, property in the business environment, criminal law, employment relationship and equal employment, business ethics and social responsibility in the global environment, contract law, agency, partnerships and corporations, sole proprietorships and franchises, and securities regulation. The course emphasizes practical application of the law where appropriate. This course is cross-listed as BUSM 2100 Business Law I and PARL 2199 Business Law I. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

BUSM 2150 Business Law II **3 Credits**

Prerequisite: BUSM 2100 or permission of instructor

This course provides students with substantive areas of law not presented in BUSM 2100 Business Law I. Primary content areas focus on Articles 2 of the Uniform Commercial Code, including sales and lease contracts, negotiable instruments, debtor-creditor relationships and bankruptcy. In addition it includes government regulation such as antitrust, consumer and employment law as well as personal and real property, insurance, wills, and trusts. Topical presentations include analysis and discussion of current issues, ethics, and statutory and case law. The course emphasizes practical application of the law where appropriate. (3 contact hours)

BUSM 2200 Organizational Behavior **3 Credits**

Prerequisite: BUSM 1300

This course provides a study and analysis of the many factors that have an impact on how individuals and groups respond to, and act in, organizations. It explores cause and effect relationships of behavior for managerial purposes and offers a theoretical foundation as well as a practical component. Students will gain an understanding of behavior within the context of organizational culture, structure, diversity, and ethics; and learn how this behavior can be influenced. Topics include personality, job satisfaction, values, perception, learning, motivation, leadership, group dynamics, conflict, power, and politics. (3 contact hours)

BUSM 2250 Leadership Development **3 Credits**

The central focus of this specialized course is the development of leaders and leadership skills. It provides a basic understanding of leadership, theories of group dynamics, and the moral and ethical responsibilities of leadership. It also assists students in developing their own style of leadership. This course is cross-listed as IDST 2500 Leadership Development and BUSM 2250 Leadership Development. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

BUSM 2300 Human Resource Management **3 Credits**

Prerequisite: BUSM 1300

This course introduces students to human resources (HR) functions, including recruitment and selection, training and development, compensation and benefits, and labor relations. It also provides an analysis of HR functions geared to help improve the effectiveness of HR professionals and operating managers. Within the context of a strategic environment, the course integrates current trends and related legislation. (3 contact hours)

BUSM 2330 Employment Practices **3 Credits**

Prerequisite: BUSM 2300 or permission of instructor

This course offers specialized study in employment practices and methods. Students will develop technical skills in the areas of job analysis, recruitment, interviewing, and selection through experiential exercises and cases while applying related legislation and current issues. Students will apply relevant employment techniques to potential "real-life" situations to develop human resources management (HRM) skills for the future manager or human resources professional. (3 contact hours)

BUSM 2350 Labor-Management Relations **3 Credits**

Prerequisite: BUSM 2300 or permission of instructor

This advanced course focuses on the history and evolution of U.S. labor-management relations. It includes the basic functional areas of labor relations and collective bargaining; key legislation affecting labor relations; and negotiation techniques and strategies. Students will practice the negotiation of a new contract through the use of role-playing techniques. (3 contact hours)

BUSM 2370 Compensation and Benefits **3 Credits**

Prerequisite: BUSM 2300 or permission of instructor

This course offers specialized study and skill development in compensation and benefits management through "hands-on" experiences with salary surveys, job evaluation, salary administration, competitive cost-effective medical plan strategies, and retirement plan design and administration. Useful for the human resources student, future manager, or human resources professional, the course integrates related legislation and current practices. Group benefits studied include life, medical, dental, vision, short and long-term disability, paid time off, and current trends. Retirement benefits studied include defined benefit plans and defined contribution plants, including 401(k) plans. (3 contact hours)

BUSM 2380 Training Skills and Techniques **3 Credits**

This specialized course for employees and supervisors offers practical introduction of all aspects of training. It includes vocabulary, adult learning principles, organizational needs analyses, learning objectives, various group and individual training approaches, assessment techniques, lesson design skills, and structure and implementation of training. The course covers an overview of the training field, use of multi-media, and training facilities design. Students will develop and present formal training sessions. (3 contact hours)

BUSM 2400 Business Communication **(TAG) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course provides students with a fundamental understanding of important oral and written skills in the business environment. This course includes practical application of oral and written communication skills in a simulated business setting. Students will develop and enhance their skills in researching, planning, writing, editing, and presenting a diversity of business communication. Additionally, emphasis on the process of writing, tone and style, and business correspondence utilizing a diversity of formats will be a major part of this course. Development and improvement of oral and employment communication, including resumes, job interview techniques, and business presentation style, is a component of this course. (3 contact hours)

BUSM 2500 Principles of Marketing **(TAG) 3 Credits**

Prerequisite: BUSM 1300, ECON 2600 (can be taken concurrently)

This course covers activities, analysis, strategies, and decision making in the context of the environment of marketing and other business functions. Topics include: integration of product, price, promotion, and distribution activities; research and analysis of markets, environments, competition, and customers; market segmentation and selection of target markets; and emphasis on behavior and perspectives of consumer and organizational customers. The course also covers planning and decision making for products and services in profit and nonprofit, domestic and global settings. (3 contact hours)

BUSM 2520 Marketing of Services **3 Credits**

Prerequisite: BUSM 2500 or permission of instructor

This specialized course focuses on the fundamental differences inherent in marketing and leadership in service enterprises and departments, both for profit and not-for-profit. The course places emphasis on strategic planning needed for competitive advantage. Content includes exemplary service enterprises, managing service quality perception, the service process, leadership essentials in services, internal marketing, marketing communications, service marketing planning, and audits. Students have the option of developing materials for their enterprises. (3 contact hours)

BUSM 2530 Advertising **(TAG) 3 Credits**

Prerequisite: BUSM 2500

This specialized course focuses on advertising as a strategic element in the marketing of goods, services and ideas. Using research-based criteria, students will develop the ability to recognize outstanding advertising and to prepare an advertising campaign plan. Course content includes integrated marketing communications, media selection, creating advertisements, effectiveness, copy writing, headline writing, direct marketing, local advertising, publicity, sales promotion, and organizational structure. (3 contact hours)

BUSM 2550 Direct and Internet Marketing **3 Credits**

Prerequisite: BUSM 2500 or permission of instructor

This specialized course focuses on the fundamentals of the rapidly expanding area of integrated direct marketing, which combines marketing communications, database marketing, Internet marketing, and distribution. Course content includes targeting, lists, databases, direct mail, Internet, telemarketing, direct response mass media, offers, creating advertisements, fulfillment, and testing and measuring effectiveness. (3 contact hours)

BUSM 2560 International Marketing **3 Credits**

Prerequisite: BUSM 1500 or permission of instructor

This course provides a comprehensive overview of International Marketing focusing on global market opportunities, emerging markets, market channels, import/export of goods/services, international sales, promotion, and advertising. Additionally, the course reviews marketing communications, research, logistics, strategy planning, formulation, and implementation. Much of the course develops marketing skills and strategies utilizing the Internet and E-Commerce platforms. (3 contact hours)

BUSM 2650 New Venture Creation **3 Credits**

Prerequisite: BUSM 1640, FINN 1300 (can be taken concurrently)

This course builds on the introduction to entrepreneurship and entrepreneurial management courses. It provides students an opportunity to observe small businesses, analyze small business successes and failures, and then prepare and present a complete business plan for a new venture. (3 contact hours)

BUSM 2700 Management Philosophy and Practice **3 Credits**

Prerequisite: BUSM 2000, 45 semester credits including 15 credits in BUSM courses

This capstone course for management majors is designed to help students synthesize their knowledge and experience from previous Lakeland business management courses with real-world work experiences. This course prepares students with additional skills and a clear approach to the way they will manage in the future through readings and discussion of current periodicals, Lakeland's annual Management Lecture Series (which is part of the course), case studies, and formal project presentations. (3 contact hours)

BUSM 2800 Business Co-Op Experience **1-4 Credits**

Prerequisite: BUSM 1300, completion of at least 12 other credits, concurrent enrollment in at least one other course, minimum 2.5 GPA, approval of experiential education coordinator

In this specialized cooperative course, students gain real life work experience and earn wages under the guidance of a faculty member and company supervisor. Currently employed students may qualify at their existing job; others may apply for employment from a list of local organizations offering cooperative work positions. College level co-op work experience requires developing new program-related skills, not simply performing tasks for which the student is already qualified. Under state guidelines, students may register for 1 credit for each unit of 180 hours of employment during the semester. Students may repeat this course until they accumulate 9 credits. NOTE: Students may apply a maximum of 9 credits in cooperative work experience, or in any combination of cooperative work experience, field experience, and/or practicum to an associate degree program.

BUSM 2900 Special Topics in Business **1-3 Credits**

Prerequisite: BUSM 1300

These specialized courses provide in-depth examination of business-related topics not covered in detail elsewhere in the curriculum.

CHEMISTRY

CHEM 1050 Chemistry in the Everyday World **(TM) 3 Credits**

This course develops and applies chemical concepts to show the importance and relevance of chemistry in our daily lives. Areas of focus include using the scientific method, atomic and molecular structure, chemical and physical changes, phases of matter, acids and bases, polymers, food chemistry, and consumer chemistry. This course is recommended for non-science majors in the fields of education, health/medical, business, and the humanities. (5 contact hours: 2 lecture, 3 lab)

CHEM 1100 Elementary Chemistry **(TM) 4 Credits**

Prerequisite: MATH 0850 or MATH 0890 or placement test into MATH 0950 or placement test into MATH 1001

This course introduces students to the fundamentals of beginning chemistry, including matter and energy, measurements, atomic and electronic structure, the periodic table, inorganic nomenclature, quantitative aspects of matter, stoichiometry, bonding, solutions, and acids and bases. Students will complete lab experiments related to these topics. This course is recommended for students who have never taken a chemistry course. (6 contact hours: 3 lecture, 3 lab)

CHEM 1150 Introduction to Organic Chemistry **(TM) 4 Credits**

Prerequisite: CHEM 1100

This course focuses on the fundamentals of organic chemistry showing the relationships between molecular structure and physical, chemical, and spectral properties for organic compounds, including alkanes, alkenes, alkynes, aromatics, alcohols, ketones, aldehydes, carboxylic acids, amides, esters, polymers, and biomolecules. Related laboratory work emphasizes fundamental techniques applied to the isolation, synthesis, and characterization of organic molecules. This course is recommended for students in health related fields. (6 contact hours: 3 lecture, 3 lab)

CHEM 1500 General Chemistry I **(TM, TAG) 5 Credits**

Prerequisite: CHEM 1100 or high school chemistry, MATH 1650 (can be taken concurrently) or its equivalent or placement test into MATH 1700

This course focuses on the principles of college chemistry, including measurements and dimensional analysis, formulas, equations and stoichiometry, solution reactions, gas laws, thermochemistry, atomic and electronic structure, the periodic table, bonding, and molecular geometry. Students will complete lab experiments related to these topics. This course is recommended for students who are pursuing an associate degree, or who are science-engineering majors, or who are attempting to qualify for a career in a health field such as physical therapy. (7 contact hours: 4 lecture, 3 lab)

CHEM 1600 General Chemistry II **(TM, TAG) 5 Credits**

Prerequisite: CHEM 1500

This course continues the study of the principles of college chemistry, including organic nomenclature, solids and liquids, solutions, chemical kinetics, molecular equilibrium, acid-base theory, acid-base equilibrium, precipitation and complex ion equilibrium, oxidation-reduction, and electrochemistry. Students will complete lab experiments related to these topics. This course is recommended for students who are pursuing an associate degree, or who are science-engineering majors, or who are attempting to qualify for a career in a health field such as physical therapy. (7 contact hours: 4 lecture, 3 lab)

CHEM 2000 Quantitative Analysis **(TM) 5 Credits**

Prerequisite: CHEM 1600

This course focuses on the principles of quantitative chemical analysis including statistics, sampling techniques, acid-base equilibria and titrations, solubility calculations, complexometric titrations, oxidation-reduction titrations and gravimetric/volumetric methods. Additionally, the course introduces students to instrumental methods such as UV-visible spectroscopy, atomic absorption spectroscopy and chromatography. Students will complete lab experiments related to these topics. This course is intended for chemistry majors and chemical technician students. (9 contact hours: 3 lecture, 6 lab)

CHEM 2500 Organic Chemistry I **(TM, TAG) 5 Credits**

Prerequisite: CHEM 1600

This specialized course is the first in an organic chemistry sequence. It focuses on basic relationships between structure and physical, chemical and spectral properties for organic compounds, including alkanes, alkenes, alkynes, aromatics, halides, alcohols, and ethers. The course covers free radical substitution, electrophilic addition, elimination, electrophilic aromatic substitution and nucleophilic substitution reactions, with emphasis on mechanisms and stereochemistry. It also introduces infrared and nuclear magnetic resonance spectroscopy and mass spectrometry. Laboratory work emphasizes basic skills such as recrystallization, extraction, distillation, chromatography synthesis, and analysis using chemical and instrumental methods. This course is intended for chemistry majors and chemical technician, pre-medical, pre-dental, and pharmacy students. (9 contact hours: 3 lecture, 6 lab)

CHEM 2600 Organic Chemistry II **(TM, TAG) 5 Credits**

Prerequisite: CHEM 2500

This course continues the organic chemistry sequence. It emphasizes organic synthesis, structure determination, stereochemistry, spectroscopy, reaction mechanisms, and the use of the chemical literature. It covers aldehydes, ketones, carboxylic acids, amines, amides, esters, polymers, fats, amino acids, carbohydrates and proteins. Students will study nucleophilic acyl substitution, nucleophilic addition, carbanions, and polymerization mechanisms. Related laboratory experience emphasizes more advanced synthetic and analytical procedures, using both macro and micro techniques. This course is intended for chemistry majors and chemical technician, pre-medical, pre-dental, and pharmacy students. (9 contact hours: 3 lecture, 6 lab)

CHEM 2900 Special Topics in Chemistry **1-5 Credits**

These specialized courses provide in-depth examinations of topics not covered in detail elsewhere in the curriculum. Students will study such subjects as polymers, chromatography, or spectroscopy and will complete lab experiments related to these topics.

CHINESE

CHIN 1001 Elementary Chinese I **4 Credits**

This course is the first in the two-course Elementary Chinese sequence. It introduces the study of the sound system-syllable structures, tones - and the basic language expressions pertaining to daily activities in life. Students will also learn Chinese character writing in each lesson of the textbook. Students will speak, listen, read, and write in simulated situations and will be equipped with some level of cultural understanding suitable for correct performance of assigned tasks in Chinese. The course includes intensive listening comprehension training through the use of audiovisual and multimedia materials and discussion of various topics. (4 contact hours)

CHIN 1002 Elementary Chinese II **4 Credits**

Prerequisite: CHIN 1001 or permission of instructor

This course is the second in the two-course Elementary Chinese sequence. It covers comparative sentences; descriptive, potential, directional and resultative complements, as well as prepositions, question pronouns; and continuation of action/non-action and passive voice. Students will learn Chinese characters pertaining to each lesson in the text. The course continues intensive comprehension training and cultural discussion. (4 contact hours)

CISCO NETWORK INFRASTRUCTURE

CNET 1050 Voice and Data Cabling **2 Credits**

This course is designed for students interested in the physical aspects of voice and data network cabling and installation. The course focuses on cabling issues related to data and voice connections and provides an understanding of the industry and its worldwide standards, types of media and cabling, and physical and logical networks, as well as signal transmission. Students will develop skills in reading network design documentation, part list set up and purchase, pulling and mounting cable, cable management, choosing wiring closets, and patch panel installation and termination as well as installing jacks and cable testing. This hands-on, lab-oriented course stresses documentation, design, and installation issues, as well as laboratory safety, on-the-job safety, and working effectively in group environments. (3.5 contact hours: 1.25 lecture, 2.25 lab)

CNET 1100 Cisco Networking Technology I **2 Credits**

This is the first course in a four-course sequence designed to provide students with skills needed to design, build, and maintain small to medium size networks. This course helps students prepare for the Cisco Certified Networking Associate Exam. (3.5 contact hours: 1.25 lecture, 2.25 lab)

CNET 1200 Cisco Networking Technology II **2 Credits**

Prerequisite: CNET 1100

This is the second course in a four-course sequence designed to provide students with skills needed to design, build, and maintain small to medium size networks. This course helps students prepare for the Cisco Certified Networking Associate Exam. (3.5 contact hours: 1.25 lecture, 2.25 lab)

CNET 1300 Cisco Networking Technology III **2 Credits**

Prerequisite: CNET 1200

This is the third course in a four-course sequence designed to provide students with skills needed to design, build, and maintain small to medium size networks. This course helps students prepare for the Cisco Certified Networking Associate Exam. (3.5 contact hours: 1.25 lecture, 2.25 lab)

CNET 1400 Cisco Networking Technology IV **2 Credits**

Prerequisite: CNET 1300

This is the last course in a four-course sequence designed to provide students with skills needed to design, build, and maintain small to medium size networks. This course helps students prepare for the Cisco Certified Networking Associate Exam. (3.5 contact hours: 1.25 lecture, 2.25 lab)

CNET 2520 Cisco Networking Technology V: Advanced Routing **3 Credits**

Prerequisite: CNET 1400 or Cisco Certified Networking Associate (CCNA) Certification

This course introduces application of advanced routing protocols in large scalable networks. Students will learn how to implement dynamic routing strategies to produce networks that are reliable, responsive, and efficient. Special emphasis is placed on protocol migration, multiple protocol environments, and route optimization. This course helps students prepare for the Cisco Certified Networking Professional series of exams. (5 contact hours: 2 lecture, 3 lab)

CNET 2560 Cisco Networking Technology VII: Multi-Layer Switching **3 Credits**

Prerequisite: CNET 2520

This course provides instruction to implement and troubleshoot large local networks using hierarchical design. Students will study virtual networks, backbone design, multicasting, hot standby units, and network security. This course helps students prepare for the Cisco Certified Networking Professional series of exams. (5 contact hours: 2 lecture, 3 lab)

CNET 2720 Cisco Network Security I: Managing Security **3 Credits**

Prerequisite: CNET 1200

This is the first in a two-course series designed to provide students with the skills necessary to design, install, and support Cisco Security Solutions. It focuses on building and maintaining Cisco security solutions, including standalone firewall products and IOS software features. This course helps students prepare for the Cisco Security Specialist 1 (CSS1) and the Cisco Certified Internet Professional (CCIP) series certification exams. (5 contact hours: 2 lecture, 3 lab)

CIVIL ENGINEERING TECHNOLOGY

CIVT 1011 Construction Methods and Materials **(TAG) 3 Credits**

This first course in the program introduces new students to the field of Architecture, Engineering, and Construction. The course content relates to the construction of residential, commercial, and industrial buildings, highways, and other civil engineering projects. Students will study, in detail, the common construction materials and their engineering properties, manufacture, and installation. They will also learn about issues pertinent to the owner, designer, project manager, and constructor. The laboratory component consists of class demonstrations and off-campus site visits as arranged. (4 contact hours: 2 lecture, 2 lab)

CIVT 1012 Reading Construction Drawings **1 Credit**

This course introduces students to construction plans for single family residences, light commercial buildings, roadway plans, and municipal project plans. It provides the basic knowledge and drafting skills needed to interpret and evaluate construction contract drawings and specifications. (2 contact hours: .5 lecture, 1.5 lab)

CIVT 1016 Civil Drafting **3 Credits**

Prerequisite: CIVT 1011 or permission of department chair

This course introduces the fundamentals of light commercial and civil drafting. Students will develop skills in the use of AutoCAD as a drafting instrument in the drawing of orthographic, section, auxiliary, oblique, and pictorial views. The course emphasizes engineering and construction document organization and will use details from civil industry as it applies to sanitary and bridge projects for drafting exercises. The course also introduces students to computer aided design (CAD) through the use of AutoCAD application software. Topics include the use of units, prototype development, computer drawing tools, dimensioning, and printing options. (5 contact hours: 2 lecture, 3 lab)

CIVT 1019 Architectural Building Codes and Standards **2 Credits**

Prerequisite: CIVT 1012 or permission of department chair

Students will investigate the building permit process and define buildings as described in the current state building code. The course emphasizes use groups, construction classifications, exit requirements, and fire resistance requirements. Students will develop graphical representations of proper code assemblies and material specifications for walls, roofs, and floor. (3 contact hours: 1 lecture, 2 lab)

CIVT 1021 Construction Materials Testing **2 Credits**

Prerequisite: CIVT 1011, MATH 1001 or MATH 1650, or permission of department chair

This course covers the fundamentals of field and laboratory testing of the materials incorporated in the construction of roads, walks, parking areas and building structures. Students will perform laboratory experiments in strict accordance with industry standard specifications and apparatus. The knowledge and skills introduced will help students prepare for certification examinations offered nationally by the American Concrete Institute (ACI). (4 contact hours: 1 lecture, 3 lab)

CIVT 1025 Architectural Design **3 Credits**

Prerequisite: CIVT 1016

This course introduces the principles of architectural design and graphic presentation of the single-family residence. Students will evaluate form and function of the American home through basic planning procedures to reveal and reflect the needs and expectations of its occupants. Students will learn techniques used to communicate designs graphically, through a series of practical problems and their realistic representations. (5 contact hours: 2 lecture, 3 lab)

CIVT 1028 Mechanical and Electrical Systems **2 Credits**

Prerequisite: CIVT 1012 or permission of department chair

This course provides a comprehensive overview of the design criteria, operation and installation of the heating, ventilation, and air conditioning (HVAC), plumbing, fire protection, communication, electrical and auxiliary systems in a modern building. Topics include the fundamentals of Mechanical/Electrical systems, space allocation for M/E systems in a modern building, and codes and standards for M/E systems. (3 contact hours: 1 lecture, 2 lab)

CIVT 1410 Building Construction I **3 Credits**

Prerequisite: CIVT 1011, CIVT 1019, MATH 1001 or MATH 1650; or permission of department chair

This course offers comprehensive exposure to constructing today's residential buildings. Lab exercises allow students to practice basic skills for site work and building layout, as well as installing footings, slabs, unit masonry, light framing systems, insulation, roofing, and other exterior finishes. (5 contact hours: 2 lecture, 3 lab)

CIVT 2016 Scheduling and Building Information Modeling **3 Credits**

Prerequisite: CIVT 1011, CIVT 1012, ENGR 1000 or ITIS 1000, MATH 1001 or MATH 1650; or permission of department chair

This course introduces the types and methods of construction scheduling including the relationship of scheduling as it applies to constructors, designers, and owners. Instruction includes the uses and applications of Building Information Modeling (BIM) and its applications to the construction procedure. Students will examine various construction management tasks, phases of a construction project, and the fundamental principles required for managing construction projects effectively. Students will also use computer software to enhance problem solving in scheduling. (5 contact hours: 2 lecture, 3 lab)

CIVT 2017 Construction Estimating and Scheduling **3 Credits**

Prerequisite: CIVT 1011, CIVT 1012, ENGR 1000 or ITIS 1000, MATH 1001 or MATH 1650; or permission of department chair

This course introduces the types and methods of construction cost estimating and scheduling including the relationship of estimating and scheduling as it applies to constructors, designers and owners. Students will develop a basic knowledge required to make detailed quantity take-offs of labor and material costs for the purpose of bidding residential, commercial, and industrial construction projects. Students will examine various construction management tasks, phases of a construction project, and the fundamental principles required for managing construction projects effectively. Students will also use computer software to enhance problem solving in both estimating and scheduling. (5 contact hours: 2 lecture, 3 lab)

CIVT 2018 Construction Estimating **3 Credits**

Prerequisite: CIVT 1011, CIVT 1012, ENGR 1000 or ITIS 1000, MATH 1001 or MATH 1650; or permission of department chair

This course introduces the types and methods of construction cost estimating to projects for constructors, designers, and owners. Students will develop a basic knowledge required to make detailed quantity take-offs of labor and material costs for the purpose of bidding residential, commercial, and industrial construction projects. Students will examine various construction management tasks, phases of a construction project, and the fundamental principles required for managing construction projects effectively. Students will also use computer software to enhance problem solving skills in estimating. (5 contact hours: 2 lecture, 3 lab)

CIVT 2019 Applied Hydraulics **3 Credits**

Prerequisite: MATH 1201, PHYS 1200

This course introduces the basic principles of hydraulics. Students will apply the fundamental properties of fluids in analyzing hydrostatic and fluid flow problems and evaluate applications in open channels, culverts, pipe networks, and pumped systems. The course emphasizes, through laboratory experiments and computer analyses, the understanding and solution of many practical problems relevant to civil engineering projects. (5 contact hours: 2 lecture, 3 lab)

CIVT 2020 Green Building and LEED (R) Rating System **3 Credits**

This course offers a comprehensive exposure to understanding sustainable designed projects in today's residential and commercial buildings. It provides the basic knowledge to define and measure "green buildings" according to the LEED(R) Green Building Rating SystemTM. This course will also help students prepare for the LEED(R) Professional Accreditation Exams. (3 contact hours)

CIVT 2024 Construction Administration and Inspection **3 Credits**

The course emphasizes basic principles of construction administration and inspection from the design process through the construction process, including discussion of the Construction Team Responsibility and Authority. Topics include the Resident Inspector's responsibilities and all aspects of records, reporting, applicable codes and standards, inspection methods and procedures and contract administration. Additional topics include construction law and labor relations, building codes, quality assurance and quality control, construction safety, meetings and negotiations, risk allocation and liability sharing. (4 contact hours: 2 lecture, 2 lab)

CIVT 2025 Safety in Construction **2 Credits**

This course emphasizes the basic principles of construction safety and health from the rationale for the programs through the management of safety and health programs. Topics include the significance of safety and health issues on a construction project, construction safety and health legislation and organizations, the principles of accident investigation and analysis and injury control fundamentals, construction industry safety and health practices and applicable OSHA standards, engineering, design and contract administration for safe construction, and construction safety and health management. Students will receive an OSHA 30-hour certificate upon completion of the course. (3 contact hours: 1 lecture, 2 lab)

CIVT 2026 Soil and Foundations **(TAG) 3 Credits**

Prerequisite: CIVT 1021, MECT 2230

This course specializes in general approaches to the study of soils and foundations, including problem solving. Topics include the mathematical basis of soil mechanics; geologic formations, excavation techniques, and methods of subsurface exploration; natural deposits and non-uniform soils; and shallow and deep foundation analysis and design. (5 contact hours: 2 lecture, 3 lab)

CIVT 2027 Concrete and Masonry Construction **3 Credits**

Prerequisite: MECT 2230

This course introduces students to the basic design of concrete and masonry construction using the latest versions of American Concrete Institute (ACI) and American Society of Civil Engineers (ASCE) Publications. The laboratory component consists of student led problem solving and the use of computer software applications in designing structural systems. (5 contact hours: 2 lecture, 3 lab)

CIVT 2028 Steel and Timber Construction **3 Credits**

Prerequisite: MECT 2230

This course introduces students to the basic design principles of steel and timber construction using the latest versions of American Institute of Steel Construction (AISC) and American Institute of Timber Construction (AITC) Publications. The laboratory component consists of student led problem solving and the use of computer software applications in designing structural systems. (5 contact hours: 2 lecture, 3 lab)

CIVT 2029 Environmental Technology **3 Credits**

Prerequisite: CIVT 2019

This course introduces the basics of environmental engineering technology, including air pollution controls, solid and hazardous waste management, municipal water and wastewater treatment, and wetlands delineation. It identifies facets of the environment that affect the ecosystem and human life and explores those technical issues relevant to the implementation of environmental management efforts. (5 contact hours: 2 lecture, 3 lab)

CIVT 2030 Introduction to GPS Satellite Surveying **2 Credits**

Prerequisite: CIVT 2112 or permission of department chair

This course is designed to present an introduction to basic GPS surveying principles and techniques that are used by land surveyors to meet the challenge of establishing and acquiring accurate and repeatable GPS measurements. (2.5 contact hours: 1.5 lecture,1 lab)

CIVT 2111 Surveying I **2 Credits**

Prerequisite: CIVT 1016, MATH 1001 or MATH 1650; MECT 1150; or permission of department chair

This course is designed to give students hands-on experience in the use of surveying equipment with emphasis on surveying methodology. Students will use the following equipment: surveyor's tape, the theodolite, the automatic level, and their respective peripherals. (4 contact hours: 1 lecture, 3 lab)

CIVT 2112 Surveying II **2 Credits**

Prerequisite: CIVT 2111

This course continues to provide students with hands-on experience in the use of surveying equipment and surveying methodology. It emphasizes the following practical surveying applications: tape-transit traverse, staking boundary corners, transit-stadia-EDMI traverse, and topographic surveys. (4 contact hours: 1 lecture, 3 lab)

CIVT 2400 Structures in Construction I **3 Credits**

Prerequisite: MATH 1101 or MATH 1700, PHYS 1100 or PHYS 1610; or permission of department chair

This course emphasizes the systematic application of equilibrium principles, commonly called statics, to parts and structures, including analysis of external forces as vectors, multi-force members, two-dimensional trusses, and properties of cross-sectional geometry. Students will study internal forces, with associated material limits, of structures necessary to maintain equilibrium. They will also study effects of direct and shear loads in relation to material strength and deformation for simple structures and beams. (5 contact hours: 2 lecture, 3 lab)

CIVT 2405 Structures in Construction II **3 Credits**

Prerequisite: CIVT 2400 or permission of department chair

This course offers the students an introduction to the design of elements for light commercial and residential buildings. The topics include the fundamentals of design and detailing. Materials of construction include timber, light framing, composites, masonry, concrete, light gauge steel, and structural steel. (5 contact hours: 2 lecture, 3 lab)

CIVT 2420 Building Construction II **3 Credits**

Prerequisite: CIVT 1410 or permission of department chair

This course is a continuation of CIVT 1410 Building Construction I and offers a comprehensive presentation of today's light commercial construction systems. Instruction includes plumbing and electrical systems, heating and cooling systems, metal studs, anchoring systems, steel erection, plumbing and wiring, mechanical equipment installation and exterior finishes. Lab exercises allow students to develop skills in light commercial construction practices. (5 contact hours: 2 lecture, 3 lab)

COMMUNICATION STUDIES

COMM 1000 Effective Public Speaking **(TM, TAG) 3 Credits**

This course introduces students to the essential strategies and techniques employed by effective public speakers. The course covers strategic audience adaptation throughout the communication process. It provides suggestions for improving speeches in all facets, including invention, organization, style, and delivery. The course emphasizes the critical analysis of the effective and ineffective practices of historical, cultural, and contemporary speakers. It also provides opportunities for students to gain practical experiences in the art of self-expression. (3 contact hours)

COMM 1050 Fundamentals of Public Speaking **2 Credits**

This course introduces students to the fundamentals of public speaking, including invention, organization, style, and delivery. It emphasizes strategic audience adaptation throughout the communication process. It also provides opportunities for students to gain practical experience in public speaking through exercises and speech assignments. This course is designed for non-transfer students specializing in technical programs. (2 contact hours)

COMM 1100 Effective Interpersonal Communications **(TAG) 3 Credits**

This introductory course helps students become better communicators and prepares them to cope with everyday problems in face-to-face communication involving family, friends, fellow students, and co-workers. It emphasizes roles, skills, strategies, and activities that help students to develop effective interpersonal relationships. Lectures, discussions, and exercises enable students to critically assess the impact that gender, culture, perception, conflict, self-disclosure, listening, language, non-verbal expression, and emotions have on interpersonal communication transactions. (3 contact hours)

COMM 1150 Fundamentals of Interpersonal Communication **2 Credits**

This course introduces students to the fundamentals of interpersonal communication. The course helps students become better communicators and prepares them to cope with everyday problems in face-to-face communication involving family, friends, fellow students, and co-workers. It emphasizes basic roles, skills, strategies, and activities that will help students to develop effective interpersonal relationships. Lectures, discussions, and exercises focus on the impact that gender, perception, self-disclosure, listening, language, non-verbal expression, and emotions have on interpersonal communication transactions. This course is designed for non-transfer students specializing in technical programs. (2 contact hours)

COMM 2000 Advanced Public Speaking **3 Credits**

Prerequisite: COMM 1000 or COMM 1050

This advanced course builds upon the concepts established in the basic public speaking courses. It refines the understanding of the relationship between audience-centered discourse and the traditional elements of an effective public speech. The course features an analytic framework in which students can more effectively write and assess speeches. Students will further enhance their skills, strategies, and knowledge concerning effective communication practices in social, business, and professional settings. This course provides significant opportunities for students to improve their own public speaking. (3 contact hours)

COMM 2100 Advanced Interpersonal Communication **3 Credits**

Prerequisite: COMM 1100 or COMM 1150

This course continues to develop students' knowledge and practice of effective interpersonal communication. It examines the theoretical perspectives involved in interpersonal communication which relate to verbal messages, power, conflict, self-disclosures, assertiveness, nonverbal messages, communication barriers, dissolution, and dysfunctional relationships. The course emphasizes communicating in families. Students will develop practical skills and strategies that enable them to establish, maintain, and rebuild nurturing personal, professional, and social relationships. (3 contact hours)

COMM 2300 Small Group Communication **(TAG) 3 Credits**

Prerequisite: COMM 1000 or COMM 1050 or COMM 1100 or COMM 1150 or permission of instructor

This advanced class builds upon the fundamental skills taught in the introductory speech courses. It assists students in the work world and in social activities by helping them develop necessary skills for participating in task group situations. The course examines panels, forums, meetings, seminars, symposia, and committees in regard to working with people in small group situations. (3 contact hours)

COMPUTER AIDED DESIGN TECHNOLOGY

CADT 1100 Introduction to AutoCAD **3 Credits**

Prerequisite: ENGR 1000 (can be taken concurrently) or ITIS 1000 (can be taken concurrently) or ITIS 1005 (can be taken concurrently)

This course introduces students to freehand and geometric constructions commonly used in engineering technology, including methods for multiple views and three-dimensional presentation. Students will apply these principles to common machine elements such as fasteners. The course also introduces students to computer aided design (CAD) through the use of AutoCAD application software. Topics include the use of units, prototype development, computer drawing tools, dimensioning, and printing options. Students must provide a sketching set. (6 contact hours: 1.5 lecture, 4.5 lab)

CADT 1500 Advanced AutoCAD **3 Credits**

Prerequisite: CADT 1100

This course is a continuation of CADT 1100 Introduction to AutoCAD, emphasizing advanced features of AutoCAD, including combinations of drawing entities (blocks), the breakup of drawing entities (explosion), attribute labels, dimensioning and tolerancing rules, view generation from a three dimensional part, and customization of AutoCAD menus and digitizers. (6 contact hours: 1.5 lecture, 4.5 lab)

CADT 2100 Introduction to SolidWorks **3 Credits**

Prerequisite: CADT 1100

This course introduces students to three-dimensional solid modeling of discrete components and assemblies using SolidWorks software. Topics include advanced assembly modeling, part modeling, drafting with part and assembly print, and bill of material creation. Laboratory experience includes a major product design project and techniques to develop sweeps, linear patterns, circular patterns, lofts, sheet metal parts, multi-faced shells, revolved features, variable radii, fillets, molds, and initiation of rapid prototyping. (6 contact hours: 1.5 lecture, 4.5 lab)

CADT 2500 Advanced SolidWorks **3 Credits**

Prerequisite: CADT 2100

This course is intended to enhance the existing skills developed in CADT 2100 Introduction to SolidWorks. Topics include advanced sketch management, 3D sketching principles, advanced parametric shapes, 3D surfacing, advanced filleting, feature library creation, "design in context" principles, assembly level features, weldment design, mold design using core and cavity methodologies, thin walled plastic part design, advanced detail and assembly drawing creation, fundamental photorealistic rendering, leveraging legacy DXF and DWG drawings into 3D design projects and basic file management techniques using SolidWorks Explore. Design projects will apply procedures and methods for specific manufacturing processes such as mold (core and cavity) design, sheet metal enclosure design, weldment design, freeform design, and final 3D design proposal presentation. (6 contact hours: 1.5 lecture, 4.5 lab)

CADT 2600 SolidWorks Design Productivity **3 Credits**

Prerequisite: CADT 2100

This course is intended to enhance the existing skills developed in CADT 2500 Advanced SolidWorks. It focuses on enhancing students' design skills utilizing 3D capabilities of SolidWorks. Topics include Design Productivity Tools (Toolbox, FeatureWorks, Utilities, Design Checker), Design Communication Tools (PhotoWorks, Animator), Design Validation Tools (Finite Element Analysis), Design Iteration Tools (Part and Assembly-level configurations, design tables, and automation for standard part design), Advanced Assembly Modeling (Advanced mates such as Cam, Gear, Rack and Pinion, and Belt/Chain), In-Context Design (Top-Down Assembly modeling, external references), Specialized Modeling techniques, and Design Efficiency Tools (Design Libraries, Hole Wizard, Library Features, Smart Components, Macros). Students will submit a final project in accordance with course requirements. (6 contact hours: 1.5 lecture, 4.5 lab)

COMPUTER ENGINEERING TECHNOLOGY

CPET 1050 Assembling, Upgrading and Repairing Personal Computers **2 Credits**

This course introduces students to a brief theory of operations, installation and operation instructions, and testing and diagnostic procedures for personal computers and peripheral hardware including CD-ROM drives, sound cards, scanners, hard drive, motherboards and memory modules. This material is suitable for both new computer owners and experienced technicians. Laboratory experience includes setting, interfacing, testing, diagnosing, and analyzing personal computer equipment to arrive at a repair or replace decision. (3 contact hours: 1 lecture, 2 lab)

CPET 1120 C Programming for Engineering Technology **3 Credits**

This course introduces fundamental structured C programming concepts as applied to technical problem solving and hardware programming. Students will develop applications using branching, looping, disk input/output, arrays, pointers, operators, and structures. They will also develop, test, and debug hardware control and monitor applications in the laboratory. No previous programming experience is necessary. (5 contact hours: 2 lecture, 3 lab)

CPET 1200 Visual Basic for Engineering Technology I **2 Credits**

Prerequisite: ENGR 1000 or permission of instructor

This course provides entry level Visual Basic programming skills for control of industrial processes. The course develops programming concepts such as data types, math and logic operators, and branching and looping. Students will apply concepts in event-driven programs to manipulate data received from, or sent to, external hardware devices such as switches and indicators. (3 contact hours: 1 lecture, 2 lab)

CPET 2050 Advanced Assembly and Repair of Personal Computers **2 Credits**

Prerequisite: CPET 1050

This course, a continuation of CPET 1050 Assembling, Upgrading and Repairing Personal Computers, introduces students to preventive maintenance techniques for maximizing personal computer performance, troubleshooting board components, storage devices, communication hardware and workgroup networks, and diagnosing operating systems conflicts and failures. Laboratory experience includes troubleshooting and diagnosing components, printer maintenance, network components and systems, and building a functioning computer system from components. (3 contact hours: 1 lecture, 2 lab)

CPET 2060 Preparation for A+ Certification **2 Credits**

Prerequisite: CPET 2050, ELEC 1330

This course serves as a capstone course for the A+ Certificate by integrating all previous learning and concepts with the current changes in the PC industry presented as case studies in order to prepare the students to take the A+ exam. (3 contact hours: 1 lecture, 2 lab)

CPET 2200 Visual Basic for Engineering Technology II **2 Credits**

Prerequisite: CPET 1200

This course continues to develop Visual Basic programming skills for control of industrial processes. Students will write programs using the menus, dialogs, and graphic features of Visual Basic. Students will study programming concepts such as object variables, and dynamic link libraries (DLLs) and apply them in event-driven programs to manipulate data received from, or sent to external hardware devices. (3 contact hours: 1 lecture, 2 lab)

COMPUTER INTEGRATED MANUFACTURING

CIMN 0950 Introduction to Machine-Tool Technology **2 Credits**

This course introduces students, with no previous shop experience, to machine shop safety, blue print reading, shop mathematics, basic shop gauges, measuring instruments and metrology techniques, and basic machine tools. Laboratory experience includes making parts from blueprints, using a vertical milling machine, lathe, surface grinder, and drill press; and using gauges and measuring instruments to inspect parts. (CIM Tech-Prep students should not take this course.) (3 contact hours: 1 lecture, 2 lab)

CIMN 0960 Introduction to Machine-Tool Setup and CAM **2 Credits**

Prerequisite: CIMN 0950 or proficiency test or permission of instructor

This course introduces students to basic jigs, fixtures and material holding devices used in machine part production, Computer-Aided Drafting (CAD), and computer numerical control (CNC) mill and lathe manual programming. Laboratory experience includes creating prints with dimensions using fundamental CAD commands; writing, editing, and simulating CNC code; downloading CNC code to the machine tool controller; the selection of the material holding device; zeroing tooling and machine; and machining the part. (CIM Tech-Prep students should not take this course.) (3 contact hours: 1 lecture, 2 lab)

CIMN 0970 Introduction to Electrical Devices and Controls **2 Credits**

This course introduces students to electrical safety, electrical measurements, basic shop floor electricity, and fundamentals of motors, transformers, controls, and programmable logic controllers (PLCs). Laboratory experience includes building simple series and parallel circuits from schematics, taking electrical measurements, operating electrical rotating equipment, relay logic and ladder control circuit programming of PLCs, and elementary analog and digital circuits. (Engineering Tech-Prep students should not take this course.) (3 contact hours: 1 lecture, 2 lab)

CIMN 0980 Manufacturing Shop Mathematics **2 Credits**

This course is designed for students with a minimal mathematics background who want to learn a technical skill. It covers basic arithmetic operations including fractions, decimals and the metric system; the formulas, relationships and geometry of the most common two- and three-dimensional figures; and the use of oblique triangles and right-triangle trigonometry, as used in manufacturing. (2 contact hours)

CIMN 0990 Basic Blueprint Reading and Sketching **2 Credits**

This course introduces students to the fundamentals of blueprint reading and sketching for clear and correct interpretation and accurate preparation of simple industrial sketches and drawings. It covers basic concepts of lines, views, dimensions, notes, sections, shop sketching, pictorial drawing and Computer Numerical Control (CNC) drawing fundamentals. The course includes extensive out of class, industrial application based assignments. Students must furnish a specified group of sketching tools and supplies. (2 contact hours)

CIMN 1110 Machining Processes **3 Credits**

Prerequisite: CIMN 0980 or MATH 0890 or successful completion of Math Placement Test into MATH 1001, ENGR 1000 (can be taken concurrently), CIMN 0990 or CADT 1100 (CADT 1100 can be taken concurrently); or permission of instructor

This course introduces students to basic material removal processes and equipment used in manufacturing, including machine tools and accessories; cutting principles and chip formation; inspection and quality control; determination of feed, speed, depth of cut, material removal rate, and horsepower; process procedures for both producing and inspecting a part; and automation, robotics, numerical control, flexible manufacturing and computer integrated manufacturing (CIM). Laboratory experience includes the creation of operation sheets and inspection forms, selection or calculation of operating variables, machining and inspecting parts produced; and the analysis, evaluation and communication of results and conclusions. Students must provide safety glasses for use in the laboratory and a portable calculator capable of exponents and roots. (4 contact hours: 2 lecture, 2 lab)

CIMN 1160 Applied Electricity **2 Credits**

Prerequisite: MATH 1001 or placement into MATH 1101

This course, designed for mechanical and manufacturing technology students, provides a basic understanding of electricity as well as commonly used components and how these function. The course introduces students to electrical safety, electrical measurements, AC and DC circuits, common electrical components, and fundamentals of motors, transformers, controls, and programmable logic controllers (PLCs). Laboratory experience includes building and testing simple circuits from schematics, using test equipment, operating electrical, rotating equipment, relay logic and ladder control circuit programming of PLCs, and elementary analog and digital circuits. (3 contact hours: 1 lecture, 2 lab)

CIMN 1210 Materials Processing **3 Credits**

Prerequisite: ENGR 1000, MATH 1001 or higher

This course, a continuation of CIMN 1110 Machining Processes, introduces students to the basic conserving, joining, and conditioning processes and equipment used in manufacturing, including casting, forging, welding, powder metallurgy, plastics, metal forming, heat treatment and surface finishing, hot and cold working, and mechanical testing. Laboratory experience requires investigative experimentation into the engineering properties of materials, products of conditioning, and welding processes, and the creation and evaluation of aluminum cast parts, with written and oral communication of the analysis, results, and conclusions. Students must provide safety glasses for use in the laboratory and a portable calculator capable of exponents and roots. (4 contact hours: 2 lecture, 2 lab)

CIMN 1420 Computer Numerical Control Part Programming (CNC) **2 Credits**

Prerequisite: CIMN 0950 or CIMN 1110 or proficiency test or CIM Tech Prep graduate, ENGR 1000, CIMN 1002 or MATH 1001 or higher, CIMN 1005 or CADT 1100

This course introduces students to the history and terminology of computer numerical control (CNC) and the development of CNC programs using International Standards Organization (ISO) coding system (G-codes) mode including part analysis, tool selection, program development, program input, tool path simulation, editing, speed and feed determination, and part manufacture. Laboratory experience includes writing simple CNC programs; entering, downloading, and simulating tool path; and examples of machining simple parts on CNC milling and turning centers. (3 contact hours: 1 lecture, 2 lab)

CIMN 1430 Introduction to Computer Assisted Part Programming **2 Credits**

Prerequisite: CIMN 1110, CIMN 1420

This course introduces students to Computer Aided Manufacturing (CAM) and the development of multi-axis CNC part programs and files ready for downloading to machining and turning centers. Laboratory experience includes blueprint analysis to determine part holding method, order of operations, tooling, feeds and speeds, creation of part and fixture geometry, definition of tool paths, graphical verification of tool path, and post processing to generate ISO or Conversational CNC code for milling machine, turning machine, machining center, turning center and wire machine applications. (3 contact hours: 1 lecture, 2 lab)

CIMN 1450 Programming CNC Lathes **2 Credits**

Prerequisite: CIMN 1420

This course, a continuation of CIMN 1420 Computer Numerical Control Part Programming (CNC), introduces students to advanced features of setting-up and programming CNC turning centers using ISO standard (G-codes) mode of programming including fixed cycles and multiple repetitive cycles (automatic repeat cycles) dealing with roughing, finishing and threading. Laboratory experience includes the production of parts conforming to print specification with progressively more comprehensive turning programs. (3 contact hours: 1 lecture, 2 lab)

CIMN 1460 Programming CNC Machining Centers **2 Credits**

Prerequisite: CIMN 1420

This is a continuation of CIMN 1420 Computer Numerical Control Part Programming (CNC), with emphasis on advanced features of setting-up and programming CNC machining centers using ISO standard (G-codes) mode programming, including the use of canned cycles involving drilling, drilling with dwell, peck drilling, tapping, boring, milling, machining at equal intervals, and pocket milling. Laboratory experience includes production of parts to print specifications with progressively more comprehensive machining programs. (3 contact hours: 1 lecture, 2 lab)

CIMN 2190 Manufacturing Methods and Costs **3 Credits**

Prerequisite: CIMN 1110 or permission of instructor, MECT 1150 or ENGL 1121, CADT 1100

This course introduces students to the principles of manufacturing (production) methods as well as costs and cost analysis that lead to more efficient utilization of manufacturing resources. Topics include an introduction to job order costs, budgetary cost control, standard costs, and direct costing; cost improvement methods; and economic analysis of engineering proposals. Laboratory experience includes independent research and problem solving projects involving the evaluation of alternative methods and procedures; cost estimating, cost studies, cost reporting, analysis of cost data, performance of productivity measurement, evaluation of engineering proposals, return-on-investment, interest, break-even analysis, depreciation, and cash flow. (4 contact hours: 2 lecture, 2 lab)

CIMN 2240 Jig and Fixture Design I **3 Credits**

Prerequisite: CIMN 1110, CADT 1100

This course introduces students to the design and manufacture of jigs and fixtures, utilizing AutoCAD design software, with special emphasis on simplicity and economy, and incorporating geometric dimensioning and tolerancing (G, D&T). The course includes an overview of types of specialized workholding and tooling devices, including power, modular, welding, inspection, and computer numerical (CNC) jigs and fixtures; the identification of the source of design data; the analysis of sample parts for locating and supporting characteristics; and the development of a design plan. Laboratory experience includes design of template, vise-held, plate, angle-plate, channel and box, and vise-jaw jigs and fixtures from sample parts. (5 contact hours: 1 lecture, 4 lab)

CIMN 2340 Jig and Fixture Design II **3 Credits**

Prerequisite: CIMN 2240

This course, a continuation of CIMN 2240 Jig and Fixture Design I, introduces students to specialized workholding and tooling devices, including power, modular, welding, inspection, and CNC jigs and fixtures, with emphasis on simplifying and reducing cost, set-up, and work piece processing. Through laboratory experience, students will create a major design project for a specific manufacturing process and develop a professional design portfolio for use in future job placement or advancement. (5 contact hours: 1 lecture, 4 lab)

CIMN 2390 Fluid Power Technology **3 Credits**

Prerequisite: ENGL 1121 or MECT 1150, PHYS 1100, PHYS 1200

This course introduces students to the field of fluid power, including theory and applications, energy input devices, energy output devices, energy modulation devices, and auxiliary system components; storage and distribution systems as well as fluids conditioning and contamination, with emphasis on fluids, equipment, and system operation. Laboratory experience includes the assembly of standard components to perform typical industry standard fluid power system applications. Students must provide an approved set of safety goggles and a portable calculator capable of calculating exponents and roots. (4 contact hours: 2 lecture, 2 lab)

CIMN 2840 Repair and Maintenance Capstone **2 Credits**

Prerequisite: CIMN 2390 (can be taken concurrently), MECT 2150

This capstone course integrates prior learning and rigging as related to industrial maintenance and repair. Students will learn principles and applications of industrial safety, and rigging, hydraulic, pneumatic, and mechanical systems. The course will also review basic industrial skills including measurement, blueprint reading, tools, and basic calculations. (2 contact hours)

CIMN 2875 Design and Manufacturing Capstone **3 Credits**

Prerequisite: MECT 2230; or CIMN 1210, CIMN 2390 (may be taken concurrently); or CIMN 1430, CIMN 2240, CIMN 2190; or CIMN 1430, CIMN 2240

This capstone course integrates prior learning in product and machine design, manufacturing and automation. Students will utilize their skills to design, analyze, manufacture, and evaluate one or more functional and marketable products. Students will use concepts of machine and product design, manufacturing principles, and automation in a team environment resulting in the related documentation and prototype ready for manufacture. (7 contact hours: 1 lecture, 6 lab)

COUNSELING SERVICES

COUN 1100 Career Exploration **3 Credits**

This course assists students in examining the components of career choice. It focuses on career awareness, personal awareness, and educational awareness as they relate to the process of career choice. Career planning skills and self-assessment inventories will help students identify tentative career options. The course will also review decision-making strategies and techniques. This course is recommended for students who are undecided about their career choice and those who have not declared a program of study. (3 contact hours)

COUN 1200 Employment Strategies **2 Credits**

This course introduces students to effective strategies for job search and preparation. Students will identify and develop skills in preparing resumes, job applications, and cover letters; locating hidden job markets; negotiating salary; networking; and interviewing. (2 contact hours)

COUN 1300 Skills for College Success **2 Credits**

This course helps students to utilize more of their potential and to succeed in college. It introduces strategies for personal growth coupled with skills such as time management, critical thinking, note-taking and test-taking. Students will develop an individual plan for college success. This course is especially recommended for first-time students, adults returning to college, and students experiencing academic difficulties. (2 contact hours)

CRIMINAL JUSTICE (Corrections, Law Enforcement)

CRMJ 1110 Introduction to Criminal Justice **(TAG) 3 Credits**

This course surveys the complexities and diversity of the U.S. Criminal Justice system, providing an overview of historical and contemporary legal issues, legislative policy, law enforcement, court and correctional theories, goals, strategies, and ethical practices. (3 contact hours)

CRMJ 1117 Community Policing **(TAG) 3 Credits**

Prerequisite: CRMJ 1110

This course introduces students to the historic and cultural relationships between individuals, communities, and policing in the United States. The course includes policing roles, duties, styles, subculture, and discretion, and their impact on ethical police practices relating to prejudice, perception, discrimination, deviance, labeling, conflict, communication, specific subcultures, the homeless, physically and mentally challenged individuals, alternative lifestyles, and victims of violence. (3 contact hours)

CRMJ 1130 Crisis Intervention **3 Credits**

Prerequisite: CRMJ 1110 or HMSV 1115 or permission of instructor

This course introduces students to the relationship between precipitating events, crises and effective intervention and coping methods. Students will examine models of crisis intervention and address practical and ethical strategies for coping with suicides, family, ethnicity, vulnerable subgroups, grief/loss, AIDS and HIV, substance abuse, PTSD, domestic violence, and sexual assault. (3 contact hours)

CRMJ 1211 Community Corrections **(TAG) 3 Credits**

Prerequisite: CRMJ 1110

This course examines historical, current, and future correctional alternatives to incarceration for both juvenile and adult offenders. It introduces students to various topics, including model institutional systems and programs; such community-based interventions as probation, community correction centers, community treatment centers, and house arrest; required community resources; ethical and legal issues; and problems associated with the supervision of inmates with special needs. (3 contact hours)

CRMJ 1230 Introduction to Criminal Investigation **3 Credits**

Prerequisite: CRMJ 1110 or permission of instructor

This course introduces students to the history, foundations, disciplines, and specialties of the forensic science field. Students will learn the ethical and legal process of crime scene investigation, traditional and computer-based evidence collection, and their impact on the components of the criminal justice system. The course also introduces students to career opportunities and practical applications in the civilian and government fields. (3 contact hours)

CRMJ 2210 Ethics in Criminal Justice **3 Credits**

Prerequisite: CRMJ 1117 or CRMJ 1211

This course provides students an in-depth review of the fundamentals of ethical decision making within the U.S. criminal justice system, including ethical theory; doctrines; dilemmas; and principles common to the police, courts, and correctional subsystems. (3 contact hours)

CRMJ 2212 Criminal Law **3 Credits**

Prerequisite: CRMJ 1110

This course provides an in-depth examination of criminal law, including sources of law, capacity to commit crimes, defenses, and elements of select statutes. (3 contact hours)

CRMJ 2213 Criminal Investigation **3 Credits**

Prerequisite: CRMJ 1230

This course reintroduces basic methodologies used to legally and ethically investigate a wide variety of crimes. Students will learn techniques for gathering information; processing crime scenes; and collecting, recording, and preserving physical evidence. Students will learn how to use deductive reasoning in solving crimes through the use of practical problems. (3 contact hours)

CRMJ 2214 Patrol Operations **3 Credits**

Prerequisite: CRMJ 1117

This course provides an in-depth examination of the line functions of police agencies including the historical evolution of policing; ethical, legal, and political principles of police organizations; strategic planning and staffing; patrol delivery methods; and innovative programs. Students will learn how to apply principles and methods of line functions through the use of practical exercises and hands-on exercises. (3 contact hours)

CRMJ 2216 Criminal Procedure **3 Credits**

Prerequisite: CRMJ 2212 or permission of instructor

This course provides an in-depth examination of applicable Supreme Court decisions, Ohio Rules of Procedure, Ohio Rules of Evidence, and Ohio case law to reacquaint students with the procedures used by police to prosecute criminals, from initial investigation through trial. Students will also learn what criminal and civil penalties may be incurred for failure to follow established guidelines. (3 contact hours)

CRMJ 2219 Correctional Practices and Challenges **3 Credits**

Prerequisite: CRMJ 1110, CRMJ 1211

This course provides an in-depth examination of contemporary issues facing U.S. correctional staff and administrators. It provides students with the opportunity to research and discuss such ethical and current challenges as correctional theory, privatization, inmate medical needs, services and programming, special population needs, staff health-wellness, civil liability, and correctional technology. (3 contact hours)

CRMJ 2231 Juvenile Delinquency **3 Credits**

Prerequisite: CRMJ 1110

This course provides an in-depth survey of the historical and contemporary structure and operation of the juvenile justice system. Students will examine major theories of delinquency causation and explore problems of law, politics, philosophy, and sociology as they relate to delinquency prevention, control, and reform. Case studies provide students with an opportunity to apply theories to practical situations. (3 contact hours)

CRMJ 2239 Criminal Justice Internship **3 Credits**

Prerequisite: 48 semester credits towards a Criminal Justice degree, CRMJ 2210; or permission of instructor

This course helps students explore criminal justice careers and prepare for the hiring process in the criminal justice field. Students will identify personal skills and values relative to criminal justice careers. Students will learn the steps in the hiring process, and have the opportunity to work with experienced professionals in an agency setting.Students volunteer to work seven hours per week in an agency which is representative of their program of study and attend weekly two-hour, class sessions. Students must obtain approval from the host agency and may be required to undergo a background investigation. Students should obtain agency approval prior to the start of the semester in which they take the practicum. (9 contact hours: 2 lecture, 7 lab)

CRMJ 2244 Criminology **(TAG) 3 Credits**

Prerequisite: CRMJ 1110, SOCY 1150

This course provides an in-depth survey of the historical and theoretical development of the disciplines of criminology, the sociology of criminal law, and patterns of criminal behavior, and measurements of crime. The course reintroduces students to the complexities and difficulties associated with the enforcement and administration of criminal law, the social reactions to crime and public policy, and the issues and challenges to future crime control in U.S. society. (3 contact hours)

CRMJ 2250 Current Issues in Criminal Justice **3 Credits**

Prerequisite: 48 credits towards a Criminal Justice degree, CRMJ 2210; or permission of instructor

This course provides students with the opportunity to research, present, and discuss current problems and issues which face the criminal justice system. It provides information on topics that are subject to current debate in criminal justice. (3 contact hours)

CRMJ 2260 Interview and Interrogation **3 Credits**

Prerequisite: CRMJ 1117 or CRMJ 1211

This course helps students develop skills necessary to elicit information from witnesses and confessions from offenders. Students will learn to interpret body gestures and establish environments conducive to effective communications. Lab exercises provide students with an opportunity to demonstrate these skills in a realistic setting. (3 contact hours)

CRMJ 2900 Special Topics in Criminal Justice **1-3 Credits**

Prerequisite: CRMJ 1110

These specialized courses provide in-depth examinations of criminal justice topics and contemporary issues not covered in detail elsewhere in the curriculum.

DANCE

DANC 1108 Basic Ballet **1 Credit**

This course introduces the art of classical ballet. Students will learn the basic vocabulary and format for a technique class in ballet and to recognize and execute proper alignment, the primary positions of the text, and the placement or carriage of the arms, legs, and head. Laboratory experiences will include practice exercises designed to improve the execution of turns, kicks, jumps and balances. Students will learn to recognize and articulate meaningful gestures and to more fully appreciate ballet dance. This course is cross-listed as DANC 1108 Basic Ballet and PEHR 1108 Basic Ballet. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours: 2 lab)

DANC 1109 Basic Jazz Dance **1 Credit**

This course introduces students to the fundamentals of jazz dance. Students will learn the general vocabulary and exercises practiced in a dance technique class and perform exercises and basic steps to various types of contemporary music. Students will progressively learn to group together steps and movements to form longer phrases. Regular participation will improve physical fitness in terms of strength, flexibility, coordination, timing, and balance. This course will also provide opportunity for students to gain a deeper appreciation for dance and other art forms. This course is cross-listed as DANC 1109 Basic Jazz Dance and PEHR 1109 Basic Jazz Dance. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours: 2 lab)

DANC 1110 Basic Modern Dance **1 Credit**

This course introduces the art of modern dance, including, through active student participation, the basic vocabulary concepts and techniques involved with performing and viewing modern dance. Students will develop a general understanding of the human body in terms of anatomy and how the body moves. Regular participation will improve physical condition in terms of strength, flexibility, balance, coordination, and efficiency in executing any given task. The course will also develop critical and creative thinking skills. This course is cross-listed as DANC 1110 Basic Modern Dance and PEHR 1110 Basic Modern Dance. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours: 2 lab)

DANC 1500 Modern Dance I - A **3 Credits**

This course provides a comprehensive introduction to modern dance. Through active student participation, the course presents the technical skills and performance principles of modern dance. The intent of this course is to help students begin to prepare for entry into a professional dance program at a four-year college. (6 contact hours: 6 lab)

DANC 1550 Modern Dance I - B **3 Credits**

Prerequisite: DANC 1500

This course provides a continued exploration of modern dance. Through active participation, the course helps further develop technical and performance modern dance skills. The intent of this course is to help students with preparation for entry into a professional dance program at a four-year college. (6 contact hours: 6 lab)

DANC 1600 Ballet I - A **3 Credits**

This course provides a comprehensive introduction to ballet. Through active student participation, the course presents the technical skills and performance principles of ballet. The intent of this course is to help students begin to prepare for entry into a professional dance program at a four-year college. (6 contact hours: 6 lab)

DANC 1650 Ballet I - B **3 Credits**

Prerequisite: DANC 1600

This course provides a continued exploration of ballet. Through active student participation, the course helps further develop technical and performance ballet skills. The intent of this course is to help students with preparation for entry into a professional dance program at a four-year college. (6 contact hours: 6 lab)

DENTAL HYGIENE

DNHY 1110 Introduction to Preventive Oral Hygiene **4 Credits**

Prerequisite: admission to Dental Hygiene program

This course introduces students to the scope, role and responsibilities of dental hygiene; the philosophy of oral health and its relevance to dental hygiene, focusing on the causes, development, treatment, and prevention of all deposits on the teeth; and oral inspection; history taking; asepsis; medical and dental emergencies; and principles of oral debriding technique. Laboratory experience includes practice on both manikins and dental partners. (8 contact hours: 2 lecture, 6 lab)

DNHY 1111 Anatomy of Orofacial Structures **5 Credits**

Prerequisite: admission to Dental Hygiene program

This course specializes in the study of the gross and microscopic anatomy of the head and neck, including embryonic development of the head. It includes a study of the morphological characteristics of the teeth, with emphasis on positional relations. (9 contact hours: 3 lecture, 6 lab)

DNHY 1112 Dental Radiology **3 Credits**

Prerequisite: admission to Dental Hygiene program

This course emphasizes radiographic theory and technique; the history, development, nature, and properties of the x-ray; and safety precautions and uses of x-rays in dentistry. Laboratory experience provides the opportunity for practice in film placement, processing, and mounting and tube angulation. (5 contact hours: 2 lecture, 3 lab)

DNHY 1122 Nutrition and Preventative Oral Hygiene Concepts **2 Credits**

Prerequisite: BIOL 1200 or high school biology, admission to Dental Hygiene program, DNHY 1125 (must be taken concurrently)

This course focuses on basic concepts of nutrition as they affect health and disease. It emphasizes principles of nutrition as they affect oral health, with application to patient education, plaque control measures, and diet/nutritional counseling. (2 contact hours)

DNHY 1123 General and Oral Pathology **2 Credits**

Prerequisite: DNHY 1111

This course introduces concepts of general and oral pathology, including a study of the basic pathological processes of disease. It emphasizes recognizing and understanding the clinical manifestations of diseases and conditions affecting the surrounding oral tissues, including the teeth and supporting structures. It also includes instruction in the visual differentiation of normal and abnormal states. (2 contact hours)

DNHY 1124 Periodontics I **2 Credits**

Prerequisite: DNHY 1110

This course introduces the study of periodontal disease. It emphasizes the concepts of histopathology, pathogenicity, systemic implications, screening/monitoring, therapies, and treatment planning. (2 contact hours)

DNHY 1125 Dental Hygiene Practice - Clinic I **3 Credits**

Prerequisite: DNHY 1110, DNHY 1122 (must be taken concurrently), DNHY 1126 (must be taken concurrently)

This course specializes in the clinical application of concepts and theory of dental hygiene. Under the direct supervision and evaluation of faculty members, students will perform oral prophylaxis, expose radiographs, apply topical fluoride, and provide patient education for both adults and children in the clinic. (9 contact hours: 9 clinical)

DNHY 1126 Dental Hygiene Practice - Seminar I **1 Credit**

Prerequisite: DNHY 1110, DNHY 1125 (must be taken concurrently)

This course focuses on effective communication with patients, diversity/cultural diversity, and implications with the use of tobacco products. It also covers the preparation and presentation of a table clinic and includes discussion of clinical cases and occurrences in the clinical area. (1 contact hour)

DNHY 1127 Current Concepts in Dental Materials **2 Credits**

Prerequisite: DNHY 1111

This course specializes in the study of the physical properties, manipulative properties, and uses of dental materials commonly used in the dental office. Laboratory practice provides students with the opportunity to work on placing rubber dams, applying matrices, inserting base and restorative materials in prepared teeth, and finishing and polishing restorations. Other exercises provide practice in the manipulation of selected materials and include making alginate impressions, fabricating study models, applying sealants to extracted teeth, marginating overhangs, applying periodontal packs, and removing sutures. (4 contact hours: 1 lecture, 3 lab)

DNHY 2005 Pain Management for Dental Hygienists **2 Credits**

Prerequisite: DNHY 1110, DNHY 1111

This course specializes in the administration of local anesthesia, nitrous oxide, and oxygen sedation. Discussion focuses on neurophysiology, clinical action of specific agents, and pharmacology of local anesthetic and vasoconstrictors, armamentarium and their preparation, local and systemic complications, and legal considerations. (4 contact hours: 1 lecture, 3 lab)

DNHY 2110 Periodontics II **1 Credit**

Prerequisite: DNHY 1124

This course emphasizes the treatment of periodontal disease. Topics include occlusion, surgical techniques, regenerative therapy, bone replacement therapy, chemotherapeutics, oral irrigation, dental implants, and the healing of wounds. The course also focuses on treatment planning, including properly indicated treatment modalities. (1 contact hour)

DNHY 2111 Dental Pharmacology and Pain Control **2 Credits**

Prerequisite: DNHY 2005

This course specializes in the control of pain involved in dental procedures. Discussion focuses on the use of drugs and anesthetics, including their use in dental practice, their physical and chemical properties, their routes of administration, their effects on the body's systems, and the interactions that can occur. (2 contact hours)

DNHY 2112 Community Dental Health I **1 Credit**

Prerequisite: second year standing in Dental Hygiene program

This course focuses on the study of the concepts of oral health instruction as applied to the community or group. It introduces students to educational methodology, media, and resources for oral health instruction. (1 contact hour)

DNHY 2113 Dental Specialties and Extended Dental Hygiene Functions **2 Credits**

Prerequisite: DNHY 1126

This course introduces students to all phases of dentistry, with special emphasis in the areas of endodontics, orthodontics and dentofacial orthopedics, pediatric dentistry, prosthodontics, research, oral/maxillofacial surgery, and dental assisting techniques used in the various specialties. (2 contact hours)

DNHY 2114 Dental Hygiene Practice - Clinic II **4 Credits**

Prerequisite: DNHY 1125, DNHY 2005, DNHY 2115 (must be taken concurrently)

This course provides continued specialized clinical experience, implementation of POH (plaque/disease control program) root planing, periodontal debridement, and ultrasonic scaling techniques, under the direction, supervision, and evaluation of faculty. (12 contact hours: 12 clinical)

DNHY 2115 Dental Hygiene Practice Seminar II **1 Credit**

Prerequisite: DNHY 1126, DNHY 2114 (must be taken concurrently)

This course introduces and applies the principles of files, hoes, air/powder polishing, and ultrasonic instrumentation. It also addresses content in the areas of diagnostic procedures available to dental offices, federal agencies involved with healthcare, family abuse and neglect, and substance abuse. Discussion focuses on current clinical cases and problems that arise in the clinical area. (1 contact hour)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

DNHY 2126 Practice Management **1 Credit**

Prerequisite: DNHY 2113

This course introduces students to the future of dentistry and the role of the dental hygienist in the profession and association. It includes discussion of the relationship of the dental hygienist to other members of the dental health team and the principles of professional ethics, laws, and regulations related to dentistry and dental hygiene. The course also introduces students to administration and office management. (1 contact hour)

DNHY 2127 Community Dental Health II **2 Credits**

Prerequisite: DNHY 2112

This course specializes in the study of the historical development of community health practices and the administration, purposes, and functions of public health agencies. It includes discussion of biostatistical concepts, research methodologies, assessment of current dental literature, as well as project planning, operation, and evaluation of community health activities. Community involvement includes extramural assignments to school systems and community agencies. (3 contact hours: 1 lecture, 2 lab)

DNHY 2128 Dental Hygiene Practice - Clinic III **4 Credits**

Prerequisite: DNHY 2114, DNHY 2129 (must be taken concurrently)

This course is a continuation of DNHY 2114 Dental Hygiene Practice - Clinic II. It provides continued specialized clinical experience in application of dental hygiene practice theory and concepts. In addition, students will implement in-depth treatment planning. This experience will be under the direction, supervision, and evaluation of faculty. (12 contact hours: 12 clinical)

DNHY 2129 Dental Hygiene Practice - Seminar III **1 Credit**

Prerequisite: DNHY 2115, DNHY 2128 (must be taken concurrently)

This course provides continued specialized consideration and review of patient services and variables in patient treatment and dental hygiene care. It includes continued correlation of classroom concepts to practice through discussion and exercises in making informed judgments. It also includes discussion of clinical cases. (1 contact hour)

DOMESTIC STUDIES

DOMS 2000 Domestic Studies **1-4 Credits**

These specialized courses provide opportunities for domestic travel along with a formal course of study. Course topics come from within any academic discipline or are interdisciplinary in nature. Faculty members direct all courses and generally schedule travel outside of the normal academic term.

EARLY CHILDHOOD EDUCATION

ECED 1130 Introduction to Early Childhood Education **4 Credits**

This course introduces students to the Early Childhood professional field and its career opportunities through an exploration of the principles and ideas of quality environments and practices. Students will visit a variety of early childhood programs to observe and familiarize themselves with young children and the role of the early childhood educator. Students must complete a minimum of 5-10 hours volunteer work in an early childhood program. (4 contact hours)

ECED 1650 The Developing Child **(TAG) 3 Credits**

This introductory course explores the early childhood development of children, birth to eight years with an emphasis on theoretical implications both historical and contemporary. It examines the physical, social, emotional, linguistic, and intellectual characteristics of children, both typical and atypical, as well as contextual influences that affect growth and development. Students will gain an introduction to skills and techniques for observing, recording, and assessing children's behavior in a variety of early learning environments. In addition, students will develop research skills and support their understanding of child development with research based evidence and practices. This course meets Ohio Transfer Assurance Guide (TAG) requirements. (3 contact hours)

ECED 1800 Early Childhood Foundations of Learning **4 Credits**

Prerequisite: ECED 1130, EDUC 2300

This course introduces an integrated approach to math, science, and social studies for both typical and atypical children in early childhood programs. The course focuses on teaching foundations in these content areas through a variety of means including literacy, physical, and creative activities while addressing all developmental domains. Students will engage in planning and implementing developmentally appropriate learning experiences using a variety of instructional materials created by the student. (4 contact hours)

ECED 2010 Professionalism: Building Relationships **3 Credits**

This course focuses on enhancing skills and behaviors associated with team building, partnerships, and professionalism. The Early Childhood Education professional will engage in reflective practices as they build a repertoire of skills for better communication, maintaining positivity, connecting with families, and creating a welcoming and respectful culture. Students will also discuss tips regarding looking and acting the part of a true professional. Teachers, administrators, and staff can learn how to handle difficult situations productively and engage in practices that promote positive experiences with other adults in the workplace. (3 contact hours)

ECED 2110 Working with Families **(TAG) 3 Credits**

This course explores the strategies and skills needed for establishing positive, collaborative relationships with families of young children in early childhood programs and successfully involving them in their child's early education and care. Focus is on understanding the ecology of the child as well as community services, supports and agencies, the role of advocacy within the community, and developing sensitivity to diversity within family structure and culture. The course emphasizes communication skills as a means of establishing partnerships with families that are reciprocal, based on respect, and essentially enhance child development and learning. This course is part of the Early Childhood Education Transfer Assurance Guide, which has been established to provide transferability and application of credit between institutions of higher education in Ohio. (3 contact hours)

ECED 2120 Music and Movement in Early Childhood Education **3 Credits**

This course introduces students to theory, practice, and application through decision making processes within classroom communities, cultures, and disciplines. Students will develop a repertoire of teaching strategies and resources as well as reflect on their own musical experiences and how those impact their teaching. Students will engage in experiences that promote global aspects of music education including what music is, its value in life, and the impact it has on young children. The course will introduce and explore National Standards for Music Education as students begin to develop pedagogical aspects of music in education. (3 contact hours)

ECED 2140 Early Childhood Curriculum - Integrated Learning **3 Credits**

Prerequisite: ECED 1130, ECED 1650, ECED 1800, EDUC 2300; or permission of instructor

This course specializes in an integrated approach to planning, preparing, and implementing early childhood curriculum to meet all developmental domains. Students will study curriculum planning and development in order to create lesson plans, unit plans, and other media that promote optimal learning experiences for young children. Additional focus will address formative assessment practices to enhance instructional approaches that meet the diverse needs of all children including those with special needs. (3 contact hours)

ECED 2150 Language and Literacy Experiences **4 Credits**

Prerequisite: ECED 1130 or EDUC 1150, EDUC 2300, ECED 1650 or PSYC 2200, ECED 1800 (for students enrolled in the Early Childhood Education Program); or permission of instructor

This specialized course focuses on activities and experiences that support early literacy development in young children. It explores pre-reading, reading, pre-writing, writing, and language development as well as current reading and phonics trends. (4 contact hours)

ECED 2220 Early Care and Education: The First Three Years of Life **3 Credits**

This specialized course explores developmentally appropriate activities, materials, and practices that enhance early care and education for the first three years of life. The course focuses on prime times for learning and language acquisition, high quality early environments, foundations for literacy, and the principles of working with diverse family cultures in a variety of early educational settings. (3 contact hours)

ECED 2450 School-Age Child Care **3 Credits**

This course offers participants opportunities to learn about school-age children and experiences that foster optimal growth and development in the child care setting. The focus includes the role of caregiver, characteristics of children (ages 5 - 12 years), their growth and development, as well as how to implement developmentally appropriate programs and create quality environments. The basis of this course emphasizes ethics, theories, community resources, and research-based practices for curriculum that aligns with national standards. (3 contact hours)

ECED 2500 Leadership and Administration in Early Childhood Education **3 Credits**

This specialized course addresses the professionalism, knowledge, and competencies needed for effective leadership of early care and education programs. Topics include planning, administering, managing, financing, staffing, and licensing early education programs. Students will explore current issues and public policies through the perspective of child advocacy, career pathways, and professional development within the early education field. The course also addresses state laws governing programs and ethical conduct in the profession. (3 contact hours)

ECED 2800 Student Teaching Practicum and Seminar **4 Credits**

Prerequisite: permission of Early Childhood Education program director, minimum 2.0 GPA, a grade of "C" or better in all ECED/EDUC courses, completion of all courses through the third semester in the curriculum guide

This course is a supervised student teaching experience with young children of diverse ages (infancy to school-age), diverse abilities, and reflecting socially, culturally, and linguistically diverse family systems. It includes actual practicum experience in child guidance, assessment, teaching strategies, and overall operation of an early childhood education program. Students must spend a minimum of 14 hours student teaching in an assigned school placement and two hours in a college seminar each week of the semester. (16 contact hours: 2 lecture, 14 lab)

ECED 2840 Introduction to the Reggio Emilia Approach **3 Credits**

Prerequisite: Second-year standing in Early Childhood Education program, or graduate of ECE or related program, or permission of instructor

This course introduces students to the Reggio Emilia Approach to learning. Emergent curriculum, project exploration, creative art media, and cultural influences are issues the student will explore. The course also discusses portfolio assessment and documentation. (3 contact hours)

ECED 2900 Special Topics in Early Childhood Education **1-3 Credits**

These specialized courses provide in-depth examinations of Early Childhood Education topics and current issues not covered in detail elsewhere in the curriculum.

ECED 2901 Special Topics: Standards and Developmentally Appropriate Practice **1 Credit**

This specialized course provides an in-depth examination of how to integrate and use both developmentally appropriate practices and the Ohio Department of Education's Early Learning Content Standards as a foundation for curriculum development in the preschool environment. (1 contact hour)

ECED 2902 Special Topics: Literacy and Early Learning Content Standards **1 Credit**

This specialized course provides an in-depth examination of early literacy experiences that align with the Ohio Department of Education's Early Learning Content Standards and are essential in fostering development that prepares preschoolers for later academic success. (1 contact hour)

ECED 2903 Special Topics: Curriculum Planning/Early Childhood Education-1 **1 Credit**

This course offers licensed and pre-service preschool teachers experiences with reviewing child development principles and developmentally appropriate practice decision-making guidelines, as well as an overview of the Ohio Early Learning Content Standards as a basis for curriculum development. Students will develop goals; plan environments; and create schedules, lesson plans, and assessments while addressing the need for differentiated instruction. Students can take this course independently or consecutively with ECED 2904 Special Topics: Curriculum Planning/Early Childhood Education-2. (1 contact hour)

ECED 2904 Special Topics: Curriculum Planning/Early Childhood Education-2 **1 Credit**

This course engages licensed and pre-service preschool teachers in the process of decision making necessary for developing a developmentally appropriate unit plan that implements Ohio Early Learning Content Standards into an integrated curriculum. It also addresses topics of classroom management and current trends in early childhood education. Students can take this course independently or consecutively with ECED 2903 Special Topics: Curriculum Planning/Early Childhood Education-1. (1 contact hour)

ECONOMICS

ECON 1150 Basic Economics **(TM) 3 Credits**

This course provides an introduction to basic economics and its implications for economic problems and policies. The course aids students in the development of the understanding of the American economic system. This course is not recommended for students who intend to take or who have taken ECON 2500 Principles of Macroeconomics or ECON 2600 Principles of Microeconomics. (3 contact hours)

ECON 2500 Principles of Macroeconomics **(TM, TAG) 3 Credits**

This course provides an introduction to macroeconomics, the study of aggregate economic activity. It includes topics such as national income accounting, prices, unemployment, aggregate output, money supply, monetary policy, international trade and policy, foreign exchange, and the international monetary system. (3 contact hours)

ECON 2600 Principles of Microeconomics **(TM, TAG) 3 Credits**

This course provides an introduction to the nature of economics and to microeconomic concepts and methodology. It includes demand and supply analysis, cost, production, market structure, and factor market analysis. The course enhances students' ability to evaluate the U.S. microeconomy with emphasis on economic problems and their solutions. (3 contact hours)

ECON 2700 International Economics **3 Credits**

This course explores the determinates of international trade and finance including comparative advantage and the gains from trade in a free economy. It includes a study of the effect of trade restrictions, commercial policy, balance of payment problems in an open economy, financial crises and current case studies in International Economics. (3 contact hours)

ECON 2900 Special Topics in Economics **1-3 Credits**

These specialized courses provide in-depth examinations of economics topics not covered in detail elsewhere in the curriculum.

ECON 2910 Topics in Economics: Current Issues **2 Credits**

This course explores current economic problems facing the United States. It includes topics such as unemployment, inflation, tax reform, government spending, income distribution, healthcare costs, government regulation, labor union activities, farm problems, and energy concerns. (2 contact hours)

ECON 2930 Topics in Economics: Labor Economics **2 Credits**

This course provides an overview of the U.S. labor market including a description of the current labor market as well as the history of the labor movement. It focuses on the degree of market power provided by a labor union as well as the erosion of that market power in the current economy. The course also examines the recent growth of service and government unions and emphasizes legal aspects of the labor movement along with the classical economic models of the labor market. (2 contact hours)

EDUCATION

These are three of four Teacher Education Core Curriculum courses, which are a part of the Ohio Statewide Transfer Assurance Guide (TAG) program. The fourth course can be found under Psychology as PSYC 2200 Educational Psychology.

EDUC 1150 Introduction to Education as a Profession **(TAG, CTAG)** **3 Credits**

This course introduces students to teaching as a profession. It explores the history of American education, personal and professional characteristics of successful teachers, the teaching and learning process, and current and future issues in education. This course meets Ohio Transfer Assurance Guide (TAG) requirements. (3 contact hours)

EDUC 2031 Introduction to Individuals with Exceptionalities **(TAG)** **3 Credits**

This survey course examines the identification, developmental characteristics, and intervention strategies for exceptional children and youth across education and community settings. This course meets Ohio Transfer Assurance Guide (TAG) requirements. (3 contact hours)

EDUC 2180 Practicum in the Educational Setting **2 Credits**

Prerequisite: EDUC 2300; EDUC 1150 or (ECED 1650 and ECED 1800)

This practicum experience provides students with hands-on opportunities to apply theoretical concepts to practical situations within the field of education. On a weekly basis, students will engage in a one-hour seminar to support and discuss their learning as well as seven hours of practicum in one assigned on- or off-campus educational program. To ensure quality of the experience, a supervised visit will take place bi-weekly for each candidate. (8 contact hours: 1 lecture, 7 lab)

EDUC 2300 Educational Technology **3 Credits**

This course provides an introduction to instructional technology that can improve teaching and learning in schools or organizations where education and communication is critical. Students will use and evaluate media technology by creating learning projects that are innovative and consistent with basic learning strategies. This course meets Ohio Transfer Assurance Guide (TAG) requirements. (3contact hours)

ELECTRICAL CONSTRUCTION TECHNOLOGY

ECTA 1000 Electrical Construction Technology IA **3 Credits**

Prerequisite: formal admission to the Electrical Construction Technology program

This course presents basic scientific information about the nature of matter as it relates to understanding electrical theory and provides an understanding of the theories and principles by which all electrical devices operate. Students will learn about the structures, elements, functions, and characteristics of Direct Current (DC) circuits. The course also develops an understanding of the International Brotherhood of Electrical Workers (IBEW), National Electrical Contractors Association (NECA), and the National Joint Apprenticeship and Training Committee (NJATC) as they exist on a national and local level. A separate laboratory experience will provide students with opportunities to apply and work with concepts learned in the classroom setting. (5 contact hours: 2 lecture, 3 lab)

ECTA 1010 Electrical Construction Technology IB **3 Credits**

Prerequisite: ECTA 1000

This course provides a continuation of the topics presented in ECTA 1000 Electrical Construction Technology IA. Students will continue to develop an understanding of electrical theory and apply concepts in a separate laboratory experience. In addition, this course will explore the fundamentals of workplace safety and basic residential blueprint reading. (5 contact hours: 2 lecture, 3 lab)

ECTA 1200 Electrical Construction Technology IIA **3 Credits**

Prerequisite: ECTA 1010

Building on the history of the International Brotherhood of Electrical Workers (IBEW), National Electrical Contractors Association (NECA), and the National Joint Apprenticeship and Training Committee (NJATC), this course discusses parliamentary procedures and the Construction Organizing Membership Education Training program (COMET). Students will learn about the rules, regulations, and provisions that govern a "Safe Installation" for the electrical industry. This course also introduces the National Electrical Code (NEC), and presents scientific information about the nature of electrical theory and characteristics of Alternating Circuit (AC) circuits. A separate laboratory experience will provide students with opportunities to apply and work with concepts learned in the classroom setting. (5 contact hours: 2 lecture, 3 lab)

ECTA 1210 Electrical Construction Technology IIB **3 Credits**

Prerequisite: ECTA 1200

This course provides a continuation of the topics presented in ECTA 1200 Electrical Construction Technology IIA. Students will continue to develop an understanding of electrical theory and apply concepts in a separate laboratory experience. Building on the principles of residential blueprint reading, this course teaches the necessary concepts to properly design and lay out circuits for a residential and commercial project. Students will also learn about transformers, DC and AC generators, and conduit bending and installation. (5 contact hours: 2 lecture, 3 lab)

ECTA 2300 Advanced Electrical Construction Technology IA **3 Credits**

Prerequisite: ECTA 1210

This course introduces semiconductor devices, including information on operating characteristics and applications. It identifies semiconductor devices by their current voltage (I/V) characteristics and discusses basic semiconductor and Integrated Circuit (IC) amplifier configurations. A separate laboratory experience will provide students with opportunities to apply and work with concepts learned in the classroom setting. (5 contact hours: 2 lecture, 3 lab)

ECTA 2310 Advanced Electrical Construction Technology IB **3 Credits**

Prerequisite: ECTA 2300

This course provides a continuation of the topics presented in ECTA 2300 Advanced Electrical Construction Technology IA. Students will continue to develop an understanding of electrical theory and apply concepts in a separate laboratory experience. The course provides information necessary to the understanding of digital electronics and explores the use of Boolean algebra. It reviews characteristics of various logic families including power requirements, speed of operation, and noise immunity. In addition, the course explores the operational characteristics of NAND, NOR, XOR, and XNOR logic gates and presents the development of logic circuits and controls, and switching circuits. (5 contact hours: 2 lecture, 3 lab)

ECTA 2400 Advanced Electrical Construction Technology IIA **3 Credits**

Prerequisite: ECTA 2310

This course introduces the importance of proper grounding techniques and methods and explores the electrical conductivity of the earth and its relationship to grounding systems. The course also presents an introduction to DC and AC motors. A separate laboratory experience will provide students with opportunities to apply and work with concepts learned in the classroom setting. (5 contact hours: 2 lecture, 3 lab)

ECTA 2410 Advanced Electrical Construction Technology IIB **3 Credits**

Prerequisite: ECTA 2400

This course provides a continuation of the topics presented in ECTA 2400 Advanced Electrical Construction Technology IIA. Students will continue to develop an understanding of electrical theory and apply concepts in a separate laboratory experience. The course examines both DC and AC motors in detail and explores methods of motor control. (5 contact hours: 2 lecture, 3 lab)

ECTA 2500 Instrumentation and Testing A **3 Credits**

Prerequisite: ECTA 2410

This course introduces the various modes of control used in the process control industry. It also provides information on various types of sensors, safety factors, installation, testing instruments, and tests for measuring dielectric quality, and locating and testing faults. A separate laboratory experience will provide the students with opportunities to apply and work with concepts learned in the classroom setting. (5 contact hours: 2 lecture, 3 lab)

ECTA 2510 Instrumentation and Testing B **3 Credits**

Prerequisite: ECTA 2500

This course provides a continuation of the topics presented in ECTA 2500 Instrumentation and Testing A. Students will continue to develop an understanding of electrical theory and apply concepts in a separate laboratory experience. In addition, the course presents information on telephone and alarm systems, system installations and start-up, and fiber optic cabling. (5 contact hours: 2 lecture, 3 lab)

ELECTRONICS TECHNOLOGY

ELEC 1120 Direct Current Circuit Analysis **2 Credits**

Prerequisite: placement into ENGL 1110 or placement into ENGL 1111, MATH 1101 (can be taken concurrently)

This course introduces Direct Current (DC) circuit analysis techniques applied to series, parallel, and series-parallel resistive circuits. Problem solving methodologies focus on application of Ohm's law, Kirchhoff's laws, Mesh, Nodal and Superposition analysis, and Thevenin's and Norton's theorems. The course also addresses transient analysis of switched resistor and capacitor (RC) and switched resistor and inductor (L/R) circuits. (2 contact hours)

ELEC 1220 Alternating Current Circuit Analysis **2 Credits**

Prerequisite: ELEC 1120

This course introduces Alternating Current (AC) circuit analysis techniques applied to series, parallel, and series-parallel circuits consisting of resistors, capacitors, and inductors. Students will perform sinusoidal analysis of circuit impedance, voltage, and current, in both polar and rectangular form, using problem solving methodologies learned in ELEC 1120 Direct Current Circuit Analysis. The course also covers concepts of filtering, energy/power, and magnetism. (2 contact hours)

ELEC 1260 Direct Current and Alternating Current Laboratory **1 Credit**

Prerequisite: ELEC 1220 (can be taken concurrently)

This course applies the theoretical concepts studied in ELEC 1120 Direct Current Circuit Analysis and ELEC 1220 Alternating Current Circuit Analysis to passive analog circuits. Laboratory exercises consist of utilizing simulation software, circuit components, power supplies, function generators, oscilloscopes, and volt-ohm meters. (3 contact hours: 3 lab)

ELEC 1330 Digital Systems Fundamentals **2 Credits**

Prerequisite: ELEC 1120 or permission of instructor

This course introduces the analysis, design, and application of logic gates and higher level digital devices. Students will apply Boolean algebra, DeMorgan's theorem, and Karnaugh Map reduction techniques to logic gates and to various flip-flop and state machine devices. Digital logic applications include arithmetic, counters, registers, memory, state machines, multiplexers, and de-multiplexers. (2 contact hours)

ELEC 1400 Stand-Alone Photovoltaic Systems **2 Credits**

Prerequisite: ELEC 1120

This course provides an overview of basic stand-alone Photovoltaic (PV) systems. Concepts and applications covered include system components, site analysis, PV module criteria, mounting solutions, safety, and basic installation practices. The course will also cover fundamental concepts of sizing a residential stand-alone system, over current protection, and grounding. (4 contact hours: 1 lecture, 3 lab)

ELEC 2000 Electronic Technology Field Experience **2 Credits**

Prerequisite: permission of the Electronic Engineering Technology department chair, ELEC 1120, ELEC 1220, ELEC 1330, MATH 1201, and be matriculated into the ELEC program with a minimum cumulative GPA of 2.0

This field experience is a planned paid work activity designed to expose the student to the various technical work areas that exist within the various fields of Electronic Engineering Technology. This course is a technical elective in the Electronic Engineering Technology program. (24 contact hours: 24 lab)

ELEC 2120 Linear and Switch-Mode Power Supplies **2 Credits**

Prerequisite: ELEC 1120

This course introduces solid-state device circuit concepts, with analysis techniques, to unregulated and regulated linear power supplies, regulated switching power supplies, and power electronic switching control circuits. Students will apply theory and application of transformers, capacitors, inductors, diodes, transistors, and other solid-state devices to these topologies. (2 contact hours)

ELEC 2125 Industrial Electricity and Electronics **3 Credits**

Prerequisite: ELEC 1260 or permission of instructor

This course introduces industrial circuit concepts, with analysis techniques, applied to control centers, contactors, relays, timers, rectifiers, thyristors, transistors, operational amplifiers, pilot, and other special purpose devices. (5 contact hours: 2 lecture, 3 lab)

ELEC 2150 Operational Amplifiers and Linear Integrated Circuits **2 Credits**

Prerequisite: ELEC 1220, ELEC 2120

This course introduces op-amp and integrated circuit concepts applied to linear amplifiers, non-linear signal converters, sinusoidal and square-wave oscillators, and active filters. (2 contact hours)

ELEC 2170 Power Supply and Integrated Circuits Laboratory **1 Credit**

Prerequisite: ELEC 2150 (can be taken concurrently)

This course applies the theoretic concepts studied in ELEC 2120 Linear and Switch-Mode Power Supplies and ELEC 2150 Operational Amplifiers and Linear Integrated Circuits to active, linear, and switched, circuits. Laboratory exercises consist of utilizing simulation software, circuit components, power apparatus, function generators, oscilloscopes, and volt-ohm meters. (3 contact hours: 3 lab)

ELEC 2300 Sensors, Actuators, and Control **3 Credits**

Prerequisite: ELEC 1220, MATH 1201

This course introduces applications of discreet device sensors, actuators, and signal conditioning concepts as found in various process control system types. Students will work with analyzing and signal conditioning sensors found in the measured variable feedback loop and actuators found in the controlled variable loop. Students will also analyze Single-Input-Single-Output (SISO) continuous control system characteristics. (5 contact hours: 2 lecture, 3 lab)

ELEC 2420 Microcontroller Applications **2 Credits**

Prerequisite: ELEC 1330

This course introduces students to microcontroller hardware and software design and application concepts. Students will investigate fundamental microcontroller topologies, data acquisition techniques, digital and analog I/O interfacing, sensors, and structured programming techniques. (2 contact hours)

ELEC 2460 Digital Systems and Microcontroller Laboratory **1 Credit**

Prerequisite: ELEC 2420 (can be taken concurrently)

This course applies the theoretic concepts studied in ELEC 1330 Digital Systems Fundamentals and ELEC 2420 Microcontroller Applications to digital circuits and embedded system programming. Laboratory exercises consist of writing assembly language programs, utilizing computer software, circuit components, power supplies, function generators, oscilloscopes, and volt-ohm meters. (3 contact hours: 3 lab)

ELEC 2550 Industrial Control Systems and Instrumentation **3 Credits**

Prerequisite: ELEC 1260, MATH 1201

This course introduces control and instrumentation concepts applied to open loop, on/off, and analog closed loop control systems. Students will apply measurement and control concepts to sensors, actuators, and signal conditioning circuits found within various process control system types. Students will also analyze steady-state and transient transfer function block diagrams for sensors found within the measured variable feedback loop and for actuators found within the controlled variable loop. (5 contact hours: 2 lecture, 3 lab)

ELEC 2600 Robotics Project Lab **3 Credits**

Prerequisite: CPET 1120, ELEC 2460

This course concentrates on the practice, techniques, and theory behind building a mobile robotic system. Students will design, program, and build electronic and electro-mechanical microcontroller interfaces using either "C" or Assembly Language for the programming. (5 contact hours: 2 lecture, 3 lab)

ELEC 2650 Industrial Power Systems and Apparatus **3 Credits**

Prerequisite: ELEC 1260

This course introduces single-phase and three-phase power applied to typical industrial settings. Students will investigate industrial applications of conductor types and sizes, wiring methods, transformers, switchgear and switch boards, busways and associated equipment. (3 contact hours)

ELEC 2700 Motor Control and Servo Systems **3 Credits**

Prerequisite: ELEC 1260 or permission of instructor

This course introduces AC and DC motor theory and operation concepts to open and closed loop control systems. Students will apply feedback error correction techniques to typical servomechanisms and analyze closed loop control. (5 contact hours: 2 lecture, 3 lab)

ELEC 2750 Industrial Problem Solving and Teamwork Capstone **2 Credits**

Prerequisite: ELEC 2125, ELEC 2550 (can be taken concurrently), ELEC 2650, MECT 2150, NUET 1200

This course reviews maintenance, troubleshooting, and installation concepts as applied to various industrial settings. Students will work individually and in teams to apply knowledge from previous courses within the Industrial Electronics to real-world situations and to certification exam type problems. (2 contact hours)

ELEC 2810 Current Local and National Electrical Codes **3 Credits**

Prerequisite: ELEC 1120 or permission of instructor

This specialized course is designed for students with residential or industrial wiring experience and a working knowledge of the National Electrical Code. It provides an in-depth study of the latest revisions to the National Electrical Code and a survey of other local and national electrical codes. It also includes coverage of safe wiring methods, which are required and must be followed in the design and installation of electrical systems for all types of buildings and construction. (3 contact hours)

ELEC 2821 Programmable Logic Controllers **3 Credits**

Prerequisite: ELEC 1120 or permission of instructor

This course covers similarities between programmable controllers and relay logic. It includes programmable logic controller (PLC) instructions with application, programming, installation and troubleshooting techniques. Comprehensive labs use Allen-Bradley PLC-5 controllers and RSLogix-5 programming software to design and implement real world industrial automation applications starting with basic relay logic and progressing to advanced timer/counter applications, sequencer instructions, and data highway communications. (5 contact hours: 2 lecture, 3 lab)

ELEC 2850 Advanced Programmable Logic Controller Applications **2 Credits**

Prerequisite: ELEC 2821

This course builds on the knowledge obtained from ELEC 2821 Programmable Logic Controllers covering more advanced functions such as data acquisition, SCADA applications, High Speed Counting, Process instructions, ASCII instructions and Message instructions. It includes fundamental operator interface controls utilizing Rockwell Automation MicroLogix controllers and PanelView operator interfaces. The course also discusses several industrial networks such as EtherNet/IP, Modbus. (4 contact hours: 1 lecture, 3 lab)

EMERGENCY MANAGEMENT PLANNING & ADMINISTRATION

EMGT 1000 Introduction to Emergency Management **3 Credits**

This course provides students with an overview of the field of Emergency Management. It introduces students to the four phases of emergency management (mitigation, preparation, response, and recovery) along with the functions, organizations, and activities involved therein. (3 contact hours)

EMGT 1120 Emergency Management Administration and Policy **2 Credits**

This course provides students with an understanding of contemporary management principles and practices as they apply to emergency management, and discusses administrative methods for managing the organization. Students will gain an understanding of the decisions and challenges facing today's administrators. Topics include planning, organizing, staffing, directing, and budgeting for a typical agency. This course provides instruction commensurate with many sections of the standards and recommendations of the Ohio and Federal Emergency Management Agency. (2 contact hours)

EMGT 1140 Incident Command System **2 Credits**

This course is designed to provide a multi-discipline audience with the knowledge and training needed to develop an incident action plan and an incident command system to support such a plan. The course includes group activities and a tabletop exercise. (2 contact hours)

EMGT 1220 Emergency Planning **2 Credits**

This planning course recognizes the unique hazards, resources, and circumstances of various communities. The course provides instruction in developing the expertise of community planning teams and implementing emergency planning processes. Although it is not a prerequisite for this course, students will benefit from having taken EMGT 1140 Incident Command System or NFA/EMI equivalent ICS courses prior to taking this course. (2 contact hours)

EMGT 1240 Developing Volunteer Resources **2 Credits**

This course provides students with the knowledge and skills to effectively identify, develop, and manage a system to efficiently allocate resources, apportion donations, and recruit/supervise volunteers. (2 contact hours)

EMGT 1260 Mitigation for Emergency Managers **2 Credits**

Disaster mitigation is the foundation for reducing the impact of a disaster. This course provides instruction to members of governmental, business, non-profit, and other organizations to assist these organizations in becoming more disaster resistant. The course provides detailed information regarding the "National Mitigation Strategy." (2 contact hours)

EMGT 1280 Emergency Operations Center Management and Operation **2 Credits**

This course provides students with the knowledge and skills to interface with or manage an Emergency Operations Center (EOC) during a crisis. It includes locating, designing, operating an EOC, and how to staff, train, and brief EOC personnel. (2 contact hours)

EMGT 1350 Public Sector Community Relations and Customer Service **2 Credits**

This course details the public education planning process and the importance of effective community and media relations in carrying out the mission of public agencies. It places special emphasis on handling customer service and customer relations issues, research, ethics, and communication. The culmination of this course may be a tour of a media facility such as a television or radio station, a newspaper production facility, an interview with a media reporter, or another appropriate activity. This course provides instruction commensurate with most recommendations of NFPA Standard 1041, Public Fire and Life Safety Educator, Levels I and II, and FEMA's Public Information Officer program. This course is cross-listed as EMGT 1350 Public Sector Community Relations and Customer Service and FIRE 1350 Public Sector Community Relations and Customer Service. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours)

EMGT 1700 Emergency Response to Terrorism: Basic Concepts **1 Credit**

This course is based on a program designed by the National Fire Academy and the U. S. Department of Justice. It is designed to prepare first responder personnel to take the appropriate actions at a terrorist incident. Topics covered include biological, nuclear, incendiary, chemical and explosive (B-NICE) incidents, recognizing and understanding terrorism, and command and control issues. The suggested attendees include emergency management, police, fire, EMS, public works, and public health personnel. (1 contact hour)

EMGT 1800 Emergency Management Guided Study **1-4 Credits**

Prerequisite: Approval of Guided Studies Committee and Emergency Management Planning and Administration Program Director

This course provides a student or group of students an opportunity to pursue in-depth study in an area of emergency management under the guidance of a faculty member. The content may include issues of current relevance not covered in other coursework, or issues not covered in detail in other emergency management courses. Students must obtain the consent of a faculty member who will serve as their advisor. Consulting with this sponsoring faculty member, students must prepare a prospectus explaining the area of interest, how the area will be studied, when the study will be completed, and the procedure for evaluating the results of the study. The sponsoring faculty member will determine the credit hours for the experience and assign the final grade. Students may accrue a maximum of four credit hours by enrolling in this course multiple times, each with a different guided studies activity. Before registering for this course, students must obtain approval from the Guided Studies Committee and the Emergency Management program director for each proposal.

EMGT 2160 Exercise Design and Evaluation **3 Credits**

This course develops the students' skills in designing, planning, conducting, and evaluating an exercise that will test a simulated community's disaster plan and its operational response capability. (3 contact hours)

EMGT 2210 Public Sector Supervision and Leadership **2 Credits**

This course provides students with an overview of the principles of supervision and leadership as they apply to work in the public sector. Particular emphasis is made on supervising, motivating, and developing personnel in public safety organizations, including discussion of civil service, public liability issues, and command as an element of a quasi-military organizational structure. This course covers general supervisory/leadership principles and topics available to all public safety employees in Fire, Police, Emergency Management, and Emergency Medical Service Departments. This course is cross-listed as EMGT 2210 Public Sector Supervision and Leadership and FIRE 2210 Public Sector Supervision and Leadership. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours)

EMGT 2340 Hazardous Materials Operations and Command **3 Credits**

This course provides students with instruction in the identification of hazardous materials, chemical reactions, and the proper handling of hazardous materials incidents. It includes instruction in the implementation of the appropriate multilevel and interagency Incident Command process required to effectively handle such incidents. The course culminates with case studies and simulated incidents. The course content meets most recommendations of NFPA Standard 472, OSHA 20CFR1920.120 and U.S. EPA 40CFR311, Awareness and Operations levels and selected portions of NFPA Standard 472, Technician and Incident Commander levels. This course is cross-listed as FIRE 2340 Hazardous Materials Operations and Command and EMGT 2340 Hazardous Materials Operations and Command. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

EMGT 2360 Disaster Response and Recovery **3 Credits**

This course provides a comprehensive overview of the systems available for the management of disaster incidents. Students will examine such topics as disaster management history, organization, terminology, resources, responsibilities, and responses to specific types of incidents such as fire, flooding, severe weather, and terrorism. (3 contact hours)

EMGT 2380 Continuity of Operations **2 Credits**

This course provides instruction in the importance of an effective Continuity of Operations plan/program. Students will gain an understanding of such a plan, its key components, and submit a written draft of a portion of said plan for an organization. (2 contact hours)

EMGT 2390 Emergency Management Field Service Seminar **2 Credits**

Prerequisite: Second year standing in Emergency Management Planning and Administration Program and permission of instructor

Under the direction of qualified personnel, students will have the opportunity of experiencing first-hand an agency's role, dynamics, functions, and relationship to the community served. At the conclusion of the course, students will prepare a report discussing the differences and similarities among the agencies within which they have been placed. (2 contact hours)

EMGT 2490 Emergency Management Problem Analysis **2 Credits**

Prerequisite: Second year standing in Emergency Planning and Administration program or permission of instructor

This course provides in-service students with the opportunity to apply the knowledge gained through this and other courses. Students will examine problems and current issues facing the emergency service and propose a solution to one of these problems/issues. While some topics may vary from year to year, typical issues discussed include hiring practices, motivation and discipline, needs assessment and planning, legal issues, current legislative issues, and unfunded mandates. This course is cross-listed as EMGT 2490 Emergency Management Problem Analysis and FIRE 2490 Fire Service Problem Analysis. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours)

EMGT 2900 Current Issues in Emergency Management **1-3 Credits**

Prerequisite: EMGT 1000 or permission of program director

These specialized courses provide in-depth examinations of specialized topics and current issues not covered in detail elsewhere in the curriculum.

EMERGENCY MEDICAL TECHNOLOGY

EMTS 1010 Emergency Medical Technician-Basic **7 Credits**

Prerequisite: CPR-American Heart Association: Health Care Provider, 18 years of age or older

This introductory course provides basic knowledge and skills used in the treatment and transport of the sick or injured until they reach the hospital. The course places emphasis on anatomy and physiology related to the EMT's role in lifting and moving patients, trauma and medical patient management, and airway and cardiac management. Successful completion of this course qualifies students to take the National Registry Certification Exam for Basic EMT. (9 contact hours: 6 lecture, 3 lab)

EMTS 1050 Emergency Medical Technician-Refresher **2 Credits**

Prerequisite: Previous EMT certification

This course provides a review of basic knowledge and skills used in the treatment and transport of the sick or injured until they reach the hospital. The course places emphasis on lifting and moving patients, trauma and medical patient management, and airway and cardiac management. The course also presents current methods of patient management and the use of new equipment. Successful completion of this course meets the requirements for renewal of certification as a Basic EMT. (2 contact hours)

EMTS 2011 Paramedic Beginner **12 Credits**

Prerequisite: HLTH 1238 or both BIOL 2210 and BIOL 2210, admission to the Paramedic program, current Ohio EMT certification, current American Heart Association: Health Care Provider or American Red Cross: Professional Rescuer CPR

This is an introductory course for Emergency Medical Technician Paramedic (EMT-P) which provides the basic knowledge and skill for general patient assessment, general pharmacology, pathophysiology of shock, burn management, communicable disease prevention, respiratory management, and trauma care in the pre-hospital setting. Classroom and clinical experiences provide refinement of skills learned. This is the first of a series of four courses required for state certification. (28 contact hours: 7 lecture, 6 lab, 15 clinical)

EMTS 2021 Paramedic Intermediate A **4 Credits**

Prerequisite: EMTS 2011 or permission of instructor

This course provides students with the concepts, principles, and skills needed to care for respiratory and cardiac emergencies. Classroom and clinical experiences provide refinement of skills learned. This is the second of four courses needed for paramedic certification. (12 contact hours: 1 lecture, 6 lab, 5 clinical)

EMTS 2031 Paramedic Intermediate B **4 Credits**

Prerequisite: EMTS 2021 or permission of instructor

This course provides students with knowledge and skills needed to care for neurological, obstetrical, gynecology, and neonatology emergencies. Classroom and clinical experiences provide refinement of skills learned. This is the third course in a series of four needed for state certification. (12 contact hours: 1 lecture, 6 lab, 5 clinical)

EMTS 2041 Paramedic Advanced **4 Credits**

Prerequisite: EMTS 2031 or permission of instructor

This course provides students with knowledge and skills needed to care for pediatric emergencies, medical emergencies, and patients with special needs. Students will learn how to function at mass casualty, rescue, and hazardous material incidents. Classroom and clinical experiences provide refinement of skills learned. This is the fourth course in a series of four needed for state certification. (12 contact hours: 1 lecture, 6 lab, 5 clinical)

ENGINEERING

ENGR 1000 Introduction to Engineering Technology **2 Credits**

Prerequisite: a grade of "SC" or better in MATH 0850 OR a grade of "S" or better in MATH 0890 OR a grade of "SC" or better in CIMN 0980 or placement test into MATH 1001

This course introduces students to various fields of engineering technology. Students will learn and apply problem-solving methods while performing laboratory experiments related to engineering technology. Students will use word processing and spreadsheet applications to create laboratory reports and technical papers. Students will also use library resources and the Internet to complete assignments and will gain an introduction to quality concepts and ethics relating to engineering. (4 contact hours: 1 lecture, 3 lab)

ENGR 2800 Engineering Co-Op Experience **1-3 Credits**

Prerequisite: ENGR 1000, MATH 1001, minimum 2.5 GPA, approval of experiential education coordinator

Co-op experience is a planned, paid, work activity which relates to students' specialized occupational objectives and which students take in lieu of elective or required courses in their program with the permission of a faculty advisor. Students may repeat this course until they accumulate 9 credits. NOTE: Students may apply a maximum of 9 credits in cooperative work experience, or in any combination of cooperative work experience, field experience, and/or practicum to an associate degree program.

ENGINEERING SCIENCE

ENGS 1000 Introduction to Engineering **(TAG) 2 Credits**

This course introduces students to the various career options that are available in the engineering and engineering technology fields. It also instructs students in various methods that can be used for solving complex engineering problems, including the interpretation and presentation of data. It introduces students to many basic pieces of equipment that they will use in future laboratory experiments. Finally, it discusses many of the ethical dilemmas that engineers face during their careers in the workplace. (3 contact hours: 1 lecture, 2 lab)

ENGS 2010 Statics **(TAG) 3 Credits**

Prerequisite: MATH 2600 or equivalent

This course introduces students to the mechanics of forces and force systems, static equilibrium, forces in structures and machines, friction, centroids, moments of inertia, radii of gyration, and virtual work. (3 contact hours)

ENGS 2020 Dynamics **(TAG) 3 Credits**

Prerequisite: ENGS 2010

This course introduces students to the motion of particles and rigid bodies subjected to unbalanced force systems; the kinematics of plane motion, relative motion, and Coriolis acceleration; the concepts of force, mass and acceleration; and work, energy, impulse and momentum. (3 contact hours)

ENGS 2110 Strength of Materials **3 Credits**

Prerequisite: ENGS 2010

This course introduces students to the study of stress and strain; stress-strain relations; stress load and load deformation; relationship for axial, torsion and bending members; buckling of columns; inelastic behavior; and combined stress. (3 contact hours)

ENGS 2310 Electric Circuits I **4 Credits**

Prerequisite: MATH 2850 or permission of instructor

This course introduces the student to basic electrical concepts; network theorems; circuit laws; resistance, capacitance, inductance, response of RC, RL and RLC circuits to initial conditions and constant forcing functions; and AC steady-state analysis and AC power. It integrates computer circuit simulation software, SPICE, throughout the course. (4 contact hours)

ENGS 2700 Materials Science and Engineering **3 Credits**

Prerequisite: CHEM 1500

This course introduces students to the structure, application, and use of materials, including the relationship between a material's structure and its mechanical and physical properties. (3 contact hours)

ENGS 2820 Engineering Economic Cost Analysis **(TAG) 3 Credits**

Prerequisite: MATH 1101 or MATH 1700

This course will introduce students to the methods that are routinely utilized to make economic decisions in real-world engineering problems. Topics include cash flow analysis, time value of money calculations, replacement decisions, depreciation schedules, economic analysis of engineering proposals, costing in engineering projects, and optimizing profitability. (3 contact hours)

ENGLISH

ENGL 0111 Fundamentals of College Literacy **4 Credits**

This course focuses on the development and improvement of reading comprehension, language competency, and writing skills. The emphasis is on discovering self as a reader and writer. Through multiple opportunities to read various texts, to write collaboratively and individually, and to share writing with others, students will experience all phases of the reading and writing processes. This course is reading-intensive and writing-intensive and designed to help develop college-level literacy skills. Credits in this course will not satisfy any certificate or degree requirement. (4 contact hours)

ENGL 0220 College Reading **3 Credits**

Prerequisite: a grade of "SC" or better in ENGL 0111 or placement test

This course focuses on the development of strategic college reading skills with an emphasis on diverse approaches to reading assignments. Students will learn how to select and modify reading strategies to improve comprehension and retention. Students will apply critical reading and content analysis skills to textbook materials from a wide range of college-level courses. Credits in this course will not satisfy any certificate or degree requirement. (3 contact hours)

ENGL 0221 College Reading for Introduction to Psychology **1 Credit**

Prerequisite: placement test or permission of instructor, PSYC 1500 (must be taken concurrently)

This course will assist students to develop and apply reading and learning strategies for successful completion of college-level coursework. With concurrent enrollment in PSYC 1500 Introduction to Psychology, students will have opportunities to immediately apply new strategies to assist their learning in this course. Credit in this course will not satisfy any certificate or degree requirement. The course grade will be Satisfactory/Unsatisfactory. (1 contact hour)

ENGL 1110 English Composition I (A) **(TM) 3 Credits**

Prerequisite: placement test

This course focuses on the writing process and on the composition of expository writing assignments, including personal, informational, and critical essays. Students will read and analyze expository and imaginative texts (fiction, nonfiction, poetry, or drama). Because of duplication in course content, students who have taken ENGL 1110 English Composition I (B) should not take this course. (3 contact hours)

ENGL 1111 English Composition I (B) **(TM) 4 Credits**

Prerequisite: a grade of "SC" or better in ENGL 0111 or placement test

This course focuses on the writing process and on the composition of expository writing assignments, including personal, informational, and critical essays. Students will read and analyze expository and imaginative texts (fiction, nonfiction, poetry, or drama). In addition, the course reviews the principles of writing effective sentences and paragraphs. Fulfilling all requirements of the first course in the composition sequence, this course provides an additional credit hour designed to address the developmental needs of underprepared student writers, reviewing basic grammar and principles of writing effective sentences and paragraphs. Because of duplication in course content, students who have taken ENGL 1110 English Composition I A should not take this course. (4 contact hours)

ENGL 1120 English Composition II **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course analyzes argumentative strategies, models, and texts. Students will focus on the research process: identifying sources through electronic and print-based research strategies, evaluating research materials, and integrating and synthesizing research material. The course culminates in the production of a fully documented argumentative paper. (3 contact hours)

ENGL 1121 English Composition II-Technical Focus **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course analyzes argumentative strategies, models, and texts using technical format and materials. Students will focus on the research process: identifying sources through electronic and print-based research strategies, evaluating research materials, and integrating and synthesizing research material. The course culminates in the production of a fully documented argumentative research report or proposal/feasibility report. (3 contact hours)

ENGL 1125 Fundamentals of Grammar **2 Credits**

This course acquaints students with basic conventions of Standard English, covering grammar, punctuation, and mechanics. It reviews parts of speech and usage, as well as phrases, clauses, and basic sentence structure. Through analyzing and writing sentences, as well as completing short exercises, students will improve their sentence skills and demonstrate their understanding and mastery of clear and readable prose. (2 contact hours)

ENGL 1130 Principles of Prose Style **2 Credits**

This course examines the elements of style and conventions of grammar from a rhetorically-informed perspective. In addition to reviewing standards for clear, readable, effective prose, the course examines the effects of stylistic variations in the context of diverse writing situations. Students will analyze specimens of prose and apply their understanding of grammatical and stylistic principles to improving their own writing. Although it is not a prerequisite for this course, students will benefit from having taken ENGL 1125 Fundamentals of Grammar prior to taking this course. (2 contact hours)

ENGL 1135 Creative Writing **3 Credits**

This course introduces the theory and practice of creative writing. The course examines a variety of genres such as poetry, short fiction, creative nonfiction, or drama. Students will read and critique their own and professional writings. (3 contact hours)

ENGL 2201 Introduction to Technical Writing **2 Credits**

This course covers the application of standards of correct English to professional and technical materials. Students will practice writing correspondence, resumes, instructions, reports, and proposals or recommendation/feasibility reports. Additional focus is on audience and purpose as well as format and graphics. (2 contact hours)

ENGL 2202 Technical Research and Report Writing **3 Credits**

This course covers the application of standards of correct English to professional and technical material. Students will practice writing correspondence, employment letters and resumes, procedures, reports, and proposals for recommendation/feasibility reports. Additional focus is on an advanced analysis of audience and purposes as well as format and graphics, technical editing, and research using on-line communication. (3 contact hours)

ENGL 2203 Technical Editing **2 Credits**

Prerequisite: ENGL 1121 or permission of instructor

This course offers students an overview of the duties and responsibilities of a technical editor and gives them practice in revising and editing technical documents. Covering major aspects of technical editing, including copymarking and proofreading, it focuses on copyediting and comprehensive editing, requiring students to revise for accuracy, completeness, correctness, readability and usability, keeping audience and purpose in mind. (2 contact hours)

ENGL 2210 Introduction to Fiction **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course explores fiction as an art form through analysis of the techniques and characteristics of its various genres, including short stories, novellas, and novels. Students will study fiction elements and strategies, including point of view, plot, setting, character, theme, and literary devices. (3 contact hours)

ENGL 2215 Graphic Fiction **4 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This course examines the art and writing that evolved into "comics." Specifically, students will study how these factors work together in the new genre of graphic fiction, its development within periodicals and as separately published works, and its contemporary achievements. They also will gain direct and personal experience in how graphic fiction is produced by illustrating and writing a storyline for their own original work, assisted by both art and writing instructors. (5 contact hours: 3 lecture, 2 lab)

ENGL 2220 Introduction to Poetry **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course examines poetry and the elements of poetry, focusing primarily on 19th and 20th century poems and song lyrics. Students gain both a holistic and analytical appreciation of poetry and will have the opportunity to write their own original poems. (3 contact hours)

ENGL 2225 Graphic Fiction and Narrative **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This course explores graphic fiction and narrative as art forms through analysis of the genre's techniques and characteristics, including collected short stories, series, adaptations, and novels. Students will study graphic fiction elements and strategies, including point of view, plot, setting, character, theme, and its literary and visual devices. (3 contact hours)

ENGL 2230 Introduction to Drama **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This critical study of selected dramatic masterpieces, selected from ancient Greek to present works, clarifies the nature and major achievements of dramatic art. Students will also examine the changes in theater structures, staging techniques, and costuming from within their historical context. (3 contact hours)

ENGL 2235 Contemporary Global Fiction **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course examines novels and short stories of the last two decades, written by established and new writers from different countries and regions of the world, in English and in translation. (3 contact hours)

ENGL 2240 Children's Literature **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This course examines children's needs in literature at all levels but especially during early and middle childhood. Students will learn the characteristics of outstanding children's books, apply selection criteria, analyze literary merit, determine educational value, and practice presentation and teaching techniques. (3 contact hours)

ENGL 2245 Science Fiction **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course surveys the genre of science fiction. It emphasizes science fiction's literary development, changing treatment of basic themes, and relation to social and technological trends. (3 contact hours)

ENGL 2248 Literature by Women **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course traces the history of writing by British and American women and includes selections from the Middle Ages to contemporary times. Students will study from the major genres of fiction, poetry, drama, biography, and essays, as well as letters, journals, dreams, visions, meditations, political writings, and speeches. (3 contact hours)

ENGL 2250 Survey of American Literature I **(TM, TAG) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course provides a historical and critical study of American literature and literary figures from the colonial period to the advent of realism around 1865. (3 contact hours)

ENGL 2260 Survey of American Literature II **(TM, TAG) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course provides a historical and critical study of American literature and literary figures from 1865 to present. (3 contact hours)

ENGL 2261 Art of the Film **3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This course helps students increase their understanding and appreciation of film. The major focus of the course is on perceiving the major styles of film (formalism, realism, and classicism) as well as on understanding the two approaches to scene structure: montage and mise-en-scene. (3 contact hours)

ENGL 2262 The Films of Alfred Hitchcock **3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This course surveys representative films from the work of Alfred Hitchcock in order to analyze the growth and development of his cinematic style. The course places emphasis on the evolution of Hitchcock's visual style as well as on the characteristic themes of his work. (3 contact hours)

ENGL 2263 American Cinema **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This introductory course in film studies is a survey of the American film industry as an art form, as an industry, and as a system of representation and communication. The course explores how Hollywood films work technically, aesthetically, and culturally to reinforce and challenge America's national self-image. The content of the course is organized into four broad sections: economic foundations of the American film industry, Hollywood genres, recent trends in Hollywood films, and supplementary units on thinking and writing about films. (3 contact hours)

ENGL 2270 Literature of Contemporary Global Conflict **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course studies contemporary literature from volatile regions of the world, examining fiction, memoir, poetry, drama, and/or essays that give a human face to the conflicts reported in our newspapers. Focusing on three to four regions per semester, the course readings represent competing perspectives regarding divisive issues and warring populations in each region, and where relevant, across regions. (3 contact hours)

ENGL 2275 Multicultural Literary Studies **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course addresses question of social cohesion and division; the effects of history and social systems on individual experience; and the way literature and film both reflect and shape our perceptions of ourselves and members of different cultural groups. Through the study of literary and film representations of a wide range of cultural experiences, the course will develop students' ability to appreciate and analyze the art forms and lived experiences of people from diverse cultures. (3 contact hours)

ENGL 2276 African American Literature **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course is designed to explore major works in the African American literary canon and to examine the historical justification, cultural components, and evolution of the African American literary tradition. Students will become familiar with complex issues that frame Western ideology as they relate to African American culture and history as recorded in the African American literature. (3 contact hours)

ENGL 2280 Survey of British Literature I **(TM, TAG) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course provides a historical and critical study of British literature focusing on major texts from the Middle ages through the eighteenth century. (3 contact hours)

ENGL 2290 Survey of British Literature II **(TM, TAG) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course provides a historical and critical study of British literature focusing on major texts from the Romantic Period through the twentieth century. (3 contact hours)

ENGL 2296 Fantasy **(TM) 3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

This course surveys branches of fantasy, stressing major writers, important themes, and the relation of fantasy to social trends. It includes both short stories and novels. (3 contact hours)

ENGL 2900 Special Topics in Film **3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

These specialized courses provide in-depth examinations of film study topics, including genres, historical periods, and major figures not covered in detail elsewhere in the curriculum. These courses help students develop the ability to evaluate and appreciate films.

ENGL 2910 Topics in Film: Film Adaptations of Shakespeare's Plays **3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111 or permission of instructor

This course examines selected film adaptations of Shakespeare's plays in order to analyze the similarities and differences between theater and film. The course emphasizes characteristics of Shakespeare's plays including Elizabethan stagecraft, poetic imagery, dramatic structure, and character delineation, as well as the adaptation of these characteristics to the aesthetic demands of film. (4 contact hours: 2 lecture, 2 lab)

ENGL 2950 Special Topics in Literature **3 Credits**

Prerequisite: ENGL 1110 or ENGL 1111

These specialized courses provide in-depth examinations of areas of literature not covered in detail elsewhere in the curriculum.

ENGLISH AS A SECOND LANGUAGE

ESLP 0120 ESL: Reading/Writing/Communication Skills I **4 Credits**

Prerequisite: placement test or permission of instructor

This course will assist students in developing English speaking, listening, reading, and writing skills. The course will provide basic practice in listening to and speaking English. Students will also develop basic reading comprehension skills and vocabulary and practice writing grammatical sentences, short narratives, letters, forms, and descriptions. The course grade will be Satisfactory/Unsatisfactory. (4 contact hours)

ESLP 0130 ESL: Reading/Writing/Communication Skills II **4 Credits**

Prerequisite: ESLP 0120 or placement test or permission of instructor

This course is a continuation of ESLP 0120: ESL: Reading/Writing/Communication Skills I. It is designed to help students further develop their English speaking, listening, reading, and writing skills. The course will provide practice in listening to and speaking English. Students will also further develop reading comprehension skills and vocabulary and practice writing grammatical sentences, short narratives, letters, forms, and descriptions. The course grade will be Satisfactory/Unsatisfactory. (4 contact hours)

ESLP 0140 ESL: Reading/Writing/Communication Skills III **4 Credits**

Prerequisite: ESLP 0130 or placement test

This course is designed for ESL students at the intermediate level who need to improve their ability to write clear paragraphs and correct sentences. Students will also practice listening to lectures in English and taking notes on these lectures. Students will further develop their reading comprehension skills and vocabulary, as well as speaking and pronunciation skills. Course work will include work on grammar, usage, parts of speech, punctuation, and idioms. Writing assignments will include sentences, paragraphs, and narratives. The course grade will be Satisfactory/Unsatisfactory. (4 contact hours)

ESLP 0150 Advanced ESL: Communicating on Campus **3 Credits**

Prerequisite: ESLP 0140 or placement test

This integrated Advanced EAP (English for Academic Purposes) course focuses on further developing and refining a variety of listening and oral skills used in the American academic community. The course will address different aspects of spoken academic English. Work on accuracy and pronunciation, stress patterns, intonation, and rhythm help students in a variety of academic contexts, including making formal presentations to class. Students will complete background readings, listen to short talks, be active in class discussions, and give several short presentations. The course will provide further note-taking practice. There also will be real-life assignments that venture into tasks outside of the classroom. The course grade will be Satisfactory/Unsatisfactory. (3 contact hours)

ESLP 0160 ESL: Academic Writing **4 Credits**

Prerequisite: ESLP 0140 or placement test

This course is designed for ESL students at the high intermediate level who need to improve their writing skills to prepare for college-level writing and who are ready to begin writing essays. Course work will include instruction in sentence, paragraph, and essay structure; principles of grammar and mechanics; voice-audience awareness; and revising and editing techniques. Writing assignments will include paragraphs and essays. The course grade will be Satisfactory/Unsatisfactory. (3 contact hours)

FIELD EXPERIENCE

FLDX 1000 Field Experience **1-9 Credits**

Prerequisite: working towards a Lakeland degree or certificate, completion of at least 10 credits including at least 2 courses related to the student's field of study, minimum 2.0 GPA, approval of experiential education coordinator

Field experience is planned, paid, work activity which relates to the students' occupational objectives and which a student takes with the permission of a faculty advisor in lieu of elective or required courses in their program. The student must obtain the consent of a faculty member who will serve as their advisor. The faculty advisor will assist the student in planning the experience, visit the site of the experience for a conference with the student and the student's supervisor at least once during the semester, and assign the course grade after appropriate consultation with the employer/supervisor.

Field experience must relate to the students' educational goal. Before registering for this course, a student must be hired in an approved field experience position and the employer must accept the student and the work plan. Already employed students may use current employment as a field experience position with approval.

Students will receive one credit for a minimum of 12 clock hours of approved field experience scheduled during a standard workweek. For example, 36 hours per week for 15 weeks will warrant 3 semester credit hours. Students may repeat this course until they accumulate 9 credits. NOTE: Students may apply a maximum of 9 credits in field experience, or in any combination of field experience, cooperative work experience, and/or practicum to an associate degree program.

FINANCE

FINN 1100 Personal and Family Finance **2 Credits**

This course introduces students to a broad range of topics relating to the proper management of the financial affairs of individuals and family units. The course includes such topics as: planning for the expenditure of money (budgeting); the wise use of credit; providing transportation and shelter; saving/investing money; and planning for retirement. This elective course helps students function more effectively in our society. (2 contact hours)

FINN 1200 Fundamentals of Investing **2 Credits**

This course introduces the nonprofessional investor to the various investment alternatives available, with an emphasis on stocks and bonds. The course includes such topics as: the role of brokerage firms in the securities business; the function of security exchanges; risk and return potential as it relates to different investment alternatives; and analyzing specific securities. This elective course helps students more intelligently evaluate investment alternatives and/or advice received from professionals regarding investment alternatives. (2 contact hours)

FINN 1300 Financial Management for the Small Business **3 Credits**

This course introduces the concepts and methods of financial management for a small business using the information generated by the accounting information system. The course covers the financial aspects of starting a new business, preparing a business plan, evaluating operations using financial information, managing cash flow, and managing costs. The course also introduces some of the major federal and state tax issues relating to the operation of a business. The course is designed for present or potential business owners with little or no financial background. (3 contact hours)

FINN 1500 Applied Finance **3 Credits**

Prerequisite: ACCT 1100

This course introduces finance for industrial-oriented students who need to know more about the corporate financial structure of our economy. The course places emphasis on financial analysis, using ratios, working capital management, and capital budgeting. The course is designed for non-accounting/non-financial majors. (3 contact hours)

FIRE SCIENCE TECHNOLOGY

FIRE 1100 Introduction to Fire and Emergency Services **(TAG) 3 Credits**

This course provides students with an overview of the fire service. It introduces students to the various types of fire organizations, issues concerning fireground management and firefighter safety, the major types of apparatus and equipment employed, and the most current techniques and extinguishing agents used in fighting fires. Students will also examine the numerous public and private sector employment opportunities. (3 contact hours)

FIRE 1150 Firefighter Orientation **1 Credit**

This course provides students with a basic orientation to fire service mission, standards, and firefighter personal protective equipment. Additionally, basic instruction is provided in the areas of incident management, fire behavior, ventilation, ladders, hose streams, entry, rescue, and overhaul. (1 contact hour)

FIRE 1120 Fire Organization and Administration **2 Credits**

This course provides students with an understanding of contemporary management principles and practices as they apply to the fire service, and discusses administrative methods for managing the public organization. Students will gain an understanding of the decisions and challenges facing today's fire service administrators. Topics include planning, organizing, staffing, directing, and budgeting for a typical fire department. This course provides instruction commensurate with many sections of NFPA 1021, also known as the standard for Fire Officer Professional Qualifications. (2 contact hours)

FIRE 1170 Fire Protection and Detection Systems **(TAG) 2 Credits**

This course introduces students to the principles and practices involved in the proper installation of private fire protection and detection systems, and the selection of the appropriate extinguishing agents and detectors based upon the hazards encountered. The course includes the study of sprinkler systems, total flood and local application types of special suppression systems, several styles of fire detection and annunciation, and several other systems. This course provides instruction commensurate with selected recommendations of various National Fire Protection Association (NFPA) standards for Professional Qualifications. (2 contact hours)

FIRE 1260 Fire Prevention Practice **(TAG) 3 Credits**

This course provides students with a study of the fire codes, their relation to building construction, and maintenance of fire and life safety systems. The course examines various techniques for recognition and correction of fire code violations. Special emphasis is placed on application of knowledge gained regarding the codes and on simulated field inspection. Topics include fire hazard recognition, types of codes and standard, types of inspections, special occupancies, and the need for public relations. This course addresses selected recommendations of NFPA Standard 1031, Professional Qualifications for Fire Inspector, Levels I and II. (3 contact hours)

FIRE 1290 Building Construction for Fire and Life Safety **(TAG) 3 Credits**

This course provides, through the use of slides and construction plans, advanced training in building construction; plan review to ensure code compliance; and relative resistance of construction elements to fire, flame spread, and structural failure. Topics include construction principles for each major type of building, structural elements, and current issues facing the construction industry. This course addresses selected recommendations of NFPA Standard 1031, Professional Qualifications for Fire Inspector, Levels I and II. (3 contact hours)

FIRE 1340 Hazardous Materials for First Responders **1 Credit**

This course provides instruction in the recognition and identification of hazardous materials and defensive emergency options available to the first responder. This course meets most recommendations for requirements of NFPA Standard 472, OSHA 20CFR1910.120, and U.S. EPA 40CFR311, Awareness and Operations levels. Topics include recognition and identification of hazardous materials, placards and labels, containment systems, inter-modal transportation, and first responder decontamination. (1 contact hour)

FIRE 1350 Public Sector Community Relations and Customer Service **2 Credits**

This course details the public education planning process and the importance of effective community and media relations in carrying out the mission of public agencies. It places special emphasis on handling customer service and customer relations issues, research, ethics, and communication. The culmination of this course may be a tour of a media facility such as a television or radio station, a newspaper production facility, an interview with a media reporter, or another appropriate activity. This course provides instruction commensurate with most recommendations of NFPA Standard 1041, Public Fire and Life Safety Educator, Levels I and II, and FEMA's Public Information Officer program. This course is cross-listed as FIRE 1350 Public Sector Community Relations and Customer Service and EMGT 1350 Public Sector Community Relations and Customer Service. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours)

FIRE 1360 Fire Company Tactical Operations **2 Credits**

This course, designed for non-fire science students, provides essential information needed to effectively carry out the strategies selected by the Fireground Commander. Special emphasis is placed on the entire pre-emergency planning process, incident sizeup, tactical decision making, tactical operations, and task assignments. (2 contact hours)

FIRE 1800 Fire Science Guided Study **1-4 Credits**

Prerequisite: approval of Guided Studies Committee and Fire Science Technology program director

This course provides a student or group of students an opportunity to pursue in-depth study in an area of fire science under the guidance of a faculty member. The content may include issues of current relevance not covered in other coursework, or issues not covered in detail in other fire science courses. Students must obtain the consent of a faculty member who will serve as their advisor. Consulting with this sponsoring faculty member, students must prepare a prospectus explaining the area of interest, how the area will be studied, when the study will be completed, and the procedure for evaluating the results of the study. The sponsoring faculty member will determine the credit hours for the experience and assign the final grade. Students may accrue a maximum of four credit hours by enrolling in this course multiple times, each with a different guided studies activity. Before registering for this course, students must obtain approval from the Guided Studies Committee and the Fire Science program director for each proposal.

FIRE 2150 Advanced Firefighter **3 Credits**

Prerequisite: FIRE 1150 or Firefighter 1 Certification or permission of instructor

This course provides students with an advanced examination of the fire and emergency services. It expands the students' knowledge and skills in subject areas such as communications, reporting, tools, structural stability, safety, pre-emergency planning, and community education. (3 contact hours)

FIRE 2200 Fire Investigation Methods **3 Credits**

This course presents a systematic approach to the investigation of fires through determination of cause and origin. Topics include the legal aspects of fire investigation and scene searches, chain of evidence requirements, witness interviews, and preparation of court cases. The course also covers proper investigation of both accidental and incendiary fires. This course provides instruction commensurate with many recommendations of NFPA Standard 1033, the Standard for Fire Investigator Professional Qualifications. (3 contact hours)

FIRE 2205 Fire Service Hydraulics **2 Credits**

This course introduces students to the principles, practices, and calculations involved in the safe and efficient delivery of an uninterrupted supply of water, foam, and other extinguishing agents to the fireground. Topics include drafting water, velocity and discharge, friction loss, engine and nozzle pressures as they relate to fire streams, and fire pump testing. This course provides instruction commensurate with selected portions of NFPA Standard 1001, the standard on Firefighter Professional Qualifications. (2 contact hours)

FIRE 2210 Public Sector Supervision and Leadership **2 Credits**

This course provides students with an overview of the principles of supervision and leadership as they apply to work in the public sector. Particular emphasis is made on supervising, motivating, and developing personnel in public safety organizations, including discussion of civil service, public liability issues, and command as an element of a quasi-military organizational structure. This course covers general supervisory/leadership principles and topics available to all public safety employees in Fire, Police, Emergency Management, and Emergency Medical Service Departments. This course is cross-listed as FIRE 2210 Public Sector Supervision and Leadership and EMGT 2210 Public Sector Supervision and Leadership. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours)

FIRE 2280 Fireground Strategy and Tactics **3 Credits**

This course provides students with the knowledge needed to effectively plan fireground strategy and determine effective tactics that can be utilized to carry out strategy. Special emphasis is placed on the Incident Command System and the use of various operational levels within the Incident Command structure available to effect proper span of control and safe fireground operations. The culmination of this course is practical application of the materials by simulating a major fireground operation. This course provides instruction commensurate with selected topics of NFPA 1021, Fire Officer Professional Qualifications. (3 contact hours)

FIRE 2330 Combustion Processes and Fire Behavior **(TAG) 2 Credit**

This course applies the principles of fire chemistry to the science of fire and fire extinguishment. Students will learn how to adapt basic chemistry concepts to effective fire extinguishment. Topics include hydrocarbon and non-hydrocarbon fuels, properties of various materials, chemicals and chemical reactions, as they apply to firefighting techniques. Although it is not a prerequisite for this course, students will benefit from having taken CHEM 1050 Chemistry in the Everyday World prior to taking this course. This course provides instruction commensurate with the recommendations of NFPA Standard 1001, the Firefighter Professional Qualifications standard. (2 contact hours)

FIRE 2340 Hazardous Materials Operations and Command **3 Credits**

This course provides students with instruction in the identification of hazardous materials, chemical reactions, and the proper handling of hazardous materials incidents. It includes instruction in the implementation of the appropriate multilevel and interagency Incident Command process required to effectively handle such incidents. The course culminates with case studies and simulated incidents. The course content meets most recommendations of NFPA Standard 472, OSHA 20CFR1920.120 and U.S. EPA 40CFR311, Awareness and Operations levels and selected portions of NFPA Standard 472, Technician and Incident Commander levels. This course is cross-listed as FIRE 2340 Hazardous Materials Operations and Command and EMGT 2340 Hazardous Materials Operations and Command. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

FIRE 2380 Emergency Services Safety and Survival **(TAG) 2 Credits**

This course introduces the basic concepts of risk management, occupational health and occupational safety and their relationship to emergency services organizations. Some major course topics include classic risk management, pre-incident planning, incident scene safety, and post-incident analysis. (2 contact hours)

FIRE 2390 Fire Field Service Seminar **2 Credits**

Prerequisite: second year standing in Fire Science Technology program and permission of program director

Under the direction of qualified personnel, students will have the opportunity of experiencing first-hand the agency's role, dynamics, functions, and relationship to the community served. At the conclusion of the course, students will prepare a report discussing the differences and similarities among the four or more fire departments within which they have been placed. (2 contact hours)

FIRE 2490 Fire Service Problem Analysis **2 Credits**

Prerequisite: second year standing in Fire Science Technology program or permission of instructor

This course provides in-service students with the opportunity to apply the knowledge gained through this and other courses. Students will examine problems and current issues facing the fire service and propose a solution to one of these problems/issues. While some topics may vary from year to year, typical issues discussed include hiring practices, motivation and discipline, needs assessment and planning, legal issues, current legislative issues, and unfunded mandates. This course provides instruction commensurate with selected portions of NFPA 1021, the Fire Officer Professional Qualifications standard. This course is cross-listed as EMGT 2490 Emergency Management Problem Analysis and FIRE 2490 Fire Service Problem Analysis. Students who have taken the course under the alternative course ID should not take this course. (2 contact hours)

FIRE 2900 Current Issues in the Fire Service **1-3 Credits**

Prerequisite: FIRE 1100 or permission of program director

These specialized courses provide in-depth examinations of fire service topics and current issues not covered in detail elsewhere in the curriculum.

FIRST YEAR EXPERIENCE

FYEX 1000 First Year Experience **1 Credit**

This course introduces students to the behaviors, skills, and attitudes that are important to success in college and in college-level courses. It will include an overview of how to utilize college resources and services and how to succeed as a college student preparing for a career. This semester-long course includes an examination of attributes necessary for personal and academic success; academic programs offered at Lakeland Community College; introduction and navigation of college resources; and development of an academic pathway. Each student will leave the course equipped with the skills to achieve academic success and an individualized plan outlining a potential Academic Pathway or course of study at Lakeland. (1 contact hour)

FOREIGN STUDIES

FGNS 2000 Foreign Studies **1-6 Credits**

Prerequisite: permission of instructor

These specialized courses provide opportunities for foreign travel along with a formal course of study. Faculty members direct all courses, which may include study at recognized and accredited institutions abroad. Courses focus on a major theme such as history, art, business, or language, or are interdisciplinary in nature.

FGNS 2001 Foreign Studies: U.S. and Mexico Borderland Studies **2 Credits**

This course offers students an opportunity to participate in an organized travel seminar in the United States and Mexico. Students will meet and learn from people representing a broad range of perspectives on issues including cultural differences, immigration, environmental degradation, and global economic issues. (3 contact hours: 1 lecture, 2 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

FRENCH

FREN 1001 Elementary French I **4 Credits**

This introductory course concentrates on the study of functional French, with emphasis on speaking, writing and understanding oral and written French in basic and simple situations and texts. It includes the study of article, noun, adjective, and pronoun morphology, and the conjugation of simple indicative tenses. (4 contact hours)

FREN 1002 Elementary French II **4 Credits**

Prerequisite: FREN 1001 or permission of instructor

A continuation of French 1001 Elementary French I, this course includes an introduction to the important compound tenses and places an increasing emphasis on vocabulary building and conversation about topics of daily life. (4 contact hours)

FREN 2001 Intermediate French I: Conversation and Grammar **3 Credits**

Prerequisite: FREN 1002 or permission of instructor

This intermediate level course provides a systematic review of the essentials of French grammar with organized work-study and vocabulary building. It emphasizes the use of the language through conversational activities based on readings and role-playing activities. This course is taught in French. (3 contact hours)

FREN 2002 Intermediate French II: Culture and Civilization **3 Credits**

Prerequisite: FREN 2001 or permission of instructor

This intermediate level course introduces students to the culture and civilization of the Francophone world through readings from various sources, films and documentaries, class discussions, reports and oral presentations. This course is taught in French. (3 contact hours)

GEOGRAPHY/GEOSPATIAL TECHNOLOGY

GEOG 1500 Introduction to Geography **(TM) 3 Credits**

This course surveys the discipline of Geography, including physical environment, human society, and the use of maps and geographic technology. Students will learn about the interface between climate, landforms, vegetation, human population, culture, economic patterns, and natural resources. (3 contact hours)

GEOG 1550 Physical and Environmental Geography **(TM, TAG) 3 Credits**

This course provides an introduction to the field of physical geography, including the spatial study of the Earth systems in relation to weather, climate, landforms, vegetation and plant distribution, soils, and human interaction with these systems. (4 contact hours: 2 lecture, 2 lab)

GEOG 1600 World Regional Geography **(TM, TAG) 3 Credits**

This course examines world regions and their environmental, cultural, social, geopolitical, and economic processes. It views regions and places within the broader context of world change and the interface between globalization and local places. The course is organized around regional themes and students will study all major regions of the world. (3 contact hours)

GEOG 1700 Geographic Information Science I **(TAG) 3 Credits**

This course provides an introduction to map interpretation and analysis, including earth coordinate systems, map projections, scale, topographic mapping, thematic mapping, spatial analysis methods, and mapping accuracy and error assessment. Students will learn and apply fundamental geographic information systems functions to the interpretation and analysis of maps. (4 contact hours: 2 lecture, 2 lab)

GEOG 1800 Geography of US and Canada **(TM) 3 Credits**

This course examines the environmental, cultural, social, geopolitical, and economic processes that characterize North America. Students will study regions and places within the US and Canada from a spatial viewpoint that emphasizes location, distribution, and relationships between society and environment. (3 contact hours)

GEOG 2000 Economic Geography **(TM) 3 Credits**

This specialized course provides a study of the economic implications of the natural environment. Students will examine geo-economic topics through case studies related to agriculture, forestry, mining, and manufacturing. The course includes current information relating to geo-economic conditions in Ohio and the greater Cleveland metropolitan area. (3 contact hours)

GEOG 2500 World Cultural Geography **(TM, TAG) 3 Credits**

This course focuses on global patterns of culture, with attention to the spatial aspects of culture and the relationship between culture and environment. Themes include cultural landscapes and geographic patterns of population, religion, language, ethnicity, world development, agriculture, geopolitics, and urbanization. (3 contact hours)

GEOG 2700 Geographic Information Science II **3 Credits**

Prerequisite: GEOG 1700 or permission of instructor or department chair

This course introduces students to the theory and practice of geographic information science through computer-based processing tools, including geographic information systems (GIS). Students will study fundamentals of GIS components, spatial data models, integration of coordinate systems, digital data sources, spatial database functions, terrain analysis, spatial analysis, thematic mapping, and data quality. Applications include land use planning, landform assessment, environmental management, site analysis, and demographic mapping. (4 contact hours: 2 lecture, 2 lab)

GEOG 2710 Spatial Data Acquisition and Management **3 Credits**

Prerequisite: GEOG 2700, MATH 1550; or permission of instructor or department chair

This course addresses the creation of spatial data, integration of spatial data into databases, and spatial database management. Topics include data collection with Global Positioning Systems (GPS), geodatabase design, integration of digital imagery, accuracy evaluation, use of coordinate systems, data standardization, and documentation of metadata. (4 contact hours: 2 lecture, 2 lab)

GEOG 2730 Remote Sensing **3 Credits**

Prerequisite: ITIS 1005, GEOG 1700 and a college-level math course with a grade of "C" or better

This course provides an introduction to remote sensing and digital photogrammetry, with an emphasis on orthoimagery and LIDAR imagery and their use in geospatial technology. Topics include identification of types of remotely sensed imagery, electromagnetic spectrum, sensor types, resolution, image classification, georeferencing, and digital photogrammetric functions, including image processing, resampling, compression, and measurements. (4 contact hours: 2 lecture, 2 lab)

GEOG 2750 Spatial Analysis and Modeling **3 Credits**

Prerequisite: GEOG 2700, ITDB 1400, MATH 1550; or permission of instructor or department chair

This course addresses spatial applications and modeling in GIS. Students will gain experience in the use of buffering, overlay, spatial operators, Boolean search operators, programming, surface modeling, address matching, spatial modeling, and network and routing applications. (4.5 contact hours: 1.5 lecture, 3 lab)

GEOG 2760 Project Management in Geospatial Technology **3 Credits**

Prerequisite: GEOG 2710, GEOG 2730, GEOG 2750; or permission of instructor or department chair

Students will develop, complete, and present a project that integrates and demonstrates the use of spatial data acquisition, spatial analysis methods, and project management skills. (4.5 contact hours: 1.5 lecture, 3 lab)

GEOG 2780 Internship and Seminar in Geospatial Technology **2 Credits**

Prerequisite: permission of instructor or department chair, GEOG 2710, GEOG 2760 (can be taken concurrently)

Students will work for 100 hours under the direction of a qualified professional in geospatial technology. Students will work in a private or public agency with a focus on geospatial technology functions, including data acquisition, management, report and map making, or other geospatial tasks. The classroom seminar provides students with an overview of procedural, professional, and ethical issues faced by a geospatial technician on the job. Students will prepare a summary project for presentation to the class. Students may take this course up to two times for credit. (8 contact hours: 1 lecture, 7 lab)

GEOLOGY

GEOL 1100 Introduction to Physical Geology **(TM, TAG) 4 Credits**

This introductory geology laboratory course is intended for students interested in the natural sciences. It introduces the basic concepts and principles of physical geology including the study of volcanism, earthquakes, and mass wastage; the structure, function, and interpretation of topographic and geologic maps; the study of natural landforms; the study of local stream water quality; and the study and identification of minerals and rocks. The course uses a systems approach to concentrate on the interrelationship between the geologic environment and human impacts. It focuses on experiential learning through field trips, outdoor labs, group discussions, class discussions, and oral presentations. Hiking, canoeing, and stream quality analyses is an integral part of this course. (6 contact hours: 3 lecture, 3 lab)

GEOL 1200 Introductory Historical Geology **(TM, TAG) 4 Credits**

This introductory geology laboratory course is intended for students interested in the natural sciences. It introduces the basic concepts of historical geology including the Earth's geological history, the study of rock strata, fossil/rock correlations, rock identifications, and fossil identifications. The course uses a systems approach to study the relationships among biology, geology, hydrology, lithology, and geologic time. It focuses on active learning through field trips, outdoor labs, group discussions, and oral presentations. Hiking rough terrain, streams, and gorges are an important part of this course. (6 contact hours: 3 lecture, 3 lab)

GEOL 1300 Introduction to Stream System Analyses **(TM) 3 Credits**

This course is an introductory geology lab course intended for students interested in experiencing meaningful real-time field research and developing a stream study. It introduces the basic concepts and principles of stream system analysis including: the study of stream channels and flow; the physical, chemical, and biological interactions within a stream; and the study of human impact on the stream systems. Students will use a systems approach to concentrate on the interrelationships between fluvial environments and human impacts. The course focuses on experiential learning through in-depth field trips, outdoor labs, group discussions, class discussions, and oral presentations. Hiking and equipment handling along with stream quality analyses and extensive time spent outdoors and in streams are integral parts of this course. (5 contact hours: 1 lecture, 4 lab)

GERMAN

GERM 1001 Elementary German I **4 Credits**

This course introduces German phonology and basic grammar, with emphasis on conversation, pronunciation, listening, reading, and writing. It covers basic vocabulary, gender, subject pronouns, singular and plural interrogatives, negation, basic verb conjugation and stem-vowel changes, possessive adjectives, imperatives, two-way prepositions, and nominative, accusative and dative cases. (4 contact hours)

GERM 1002 Elementary German II **4 Credits**

Prerequisite: GERM 1001 or permission of instructor

A continuation of GERM 1001 Elementary German I, the grammar covered in this class includes modal verbs, time expressions, past tense of sein, haben and the modals, and reflexive constructions. This course makes extensive use of graded reading materials involving cross-cultural situations corresponding to chapters in the text. (4 contact hours)

GERM 2001 Intermediate German I: Conversation and Grammar **3 Credits**

Prerequisite: GERM 1002 or permission of instructor

This course completes the overview of German grammar and emphasizes the use of the language through conversational activities based on readings and role-playing activities. This course is taught in German. (3 contact hours)

GERM 2002 Intermediate German II: Culture and Civilization **3 Credits**

Prerequisite: GERM 2001 or permission of instructor

This course introduces students to the culture and civilization of the German-speaking world through readings from various sources, films and documentaries, class discussions, reports and oral presentations. This course is taught in German. (3 contact hours)

GRAPHIC DESIGN

GRDS 1010 Visual Organization **3 Credits**

This course introduces students to the various methods and techniques of basic graphic design. Through exercises using traditional (non-computer) media, it introduces students to the principles and elements of color and design as they relate to the two-dimensional surface. (6 contact hours: 6 lab)

GRDS 1015 Introduction to Typography **3 Credits**

Prerequisite: GRDS 1375 (can be taken concurrently)

This course introduces students to the history, methods, and uses of typography. Students will participate in exercises involving both traditional and computerized media using procedures needed to analyze, choose, and design with the many varieties of fonts and typefaces. (6 contact hours: 6 lab)

GRDS 1020 Graphic Design **3 Credits**

Prerequisite: GRDS 1010, GRDS 1015, GRDS 1350 (can be taken concurrently) or GRDS 1375 (can be taken concurrently) or GRDS 1400 (can be taken concurrently)

This course introduces design students to the procedures used to create advertising and designs aimed at specific target markets. Students will use both the basics acquired in the prerequisite courses and new material to design and produce logos, shopping bags, banners, and other printed materials. (6 contact hours: 6 lab)

GRDS 1375 Computer Graphics AI, ID and PS **3 Credits**

This course provides an introduction to the tools, applications, and uses of Adobe Illustrator, InDesign, and Photoshop software. Students will learn how to use the software through online tutorials, lectures, and lab exercises utilizing scanners, printers, and Macintosh computers. (4 contact hours: 2 lecture, 2 lab)

GRDS 1500 History of Graphic Design **3 Credits**

This course introduces the history of graphic design from its origins in Europe to the present. Students will examine design trends in aesthetics and theory as well as the connection between graphic design and the other visual arts. Field trips will augment class lectures depending on gallery and museum schedules. Students will complete a research paper and project, reading assignments, and in-class presentations. (3 contact hours)

GRDS 2015 Advanced Topography **3 Credits**

Prerequisite: GRDS 1020

This specialized course is a continuation of GRDS 1015 Introduction to Typography. Students will work on more complex projects that combine typography and image, further demonstrating a progression of skills and knowledge base. Projects will include both 2- and 3-dimensional challenges, including publication and package design. (6 contact hours: 6 lab)

GRDS 2110 Graphic Production **3 Credits**

Prerequisite: GRDS 1350, GRDS 1375, or GRDS 1400

This specialized course introduces students to the various methods of printing processes, color charts, papers, and file preparation. The processes studied consist of Offset Lithography, Gravure, Letterpress, Flexography, Thermography, Screenprinting, and Electronic Digital Printing. (5 contact hours: 2 lecture, 3 lab)

GRDS 2230 Advertising Design **3 Credits**

Prerequisite: GRDS 1020, GRDS 1375 (or GRDS 1350 and GRDS 1400)

This intermediate level course utilizes the methods and procedures acquired in the prerequisites to develop more advanced forms of advertising. Students will write, design, and produce ads for television, newspapers, magazines, and other traditional and non-traditional methods. (6 contact hours: 6 lab)

GRDS 2400 Automating Adobe Creative Suite Products with JavaScript **3 Credits**

Prerequisite: GRDS 1375 or permission of instructor

This intermediate-level course provides graphic design students the tools to develop an automated workflow for Adobe Creative Suite products for use in website design and/or interactive design environments. Students will use the Object Models of different applications to create, test, and implement techniques to improve workflow efficiencies. (5 contact hours: 1 lecture, 4 lab)

GRDS 2500 Graphic Design Portfolio **3 Credits**

Prerequisite: GRDS 2015, GRDS 2110, GRDS 2230

This advanced course acquaints students with all aspects of preparing and presenting their graphic design portfolios for job interviews. Students will study portfolio building (both physical and digital), resumes, cover letters, interviewing skills, social media networking, and professional practices. (5 contact hours: 2 lecture, 3 lab)

GUIDED STUDIES

GDSP 2000 Guided Studies-Individual **1-3 Credits**

Prerequisite: 30 credit hours and approval of Guided Studies Committee

This course provides students with an opportunity to pursue in-depth study in an area of special interest, under the guidance of a faculty member. Students must obtain the consent of a faculty member who will serve as their advisor. Consulting with this sponsoring faculty member, students must prepare a prospectus explaining the area of interest, how the area will be studied, when the study will be completed, and the procedure for evaluating the results of the study. The sponsoring faculty member will determine the credit hours for the experience and assign the final grade. Students may accrue a maximum of 6 credit hours in guided studies by enrolling in this course, or GDSP 2500 Guided Studies-Group, multiple times; each with a different guided studies activity. Before registering for this course, the student must obtain approval from the Guided Studies Committee for each proposal.

GDSP 2500 Guided Studies-Group **1-3 Credits**

Prerequisite: 30 credit hours and approval of Guided Studies Committee

This course provides groups of students with an opportunity to pursue in-depth study in an area of special interest, with the guidance of a faculty member. The students must obtain the consent of a faculty member who will serve as their advisor. Consulting with this sponsoring faculty member, the students must prepare a prospectus explaining the area of interest, how the area will be studied, when the study will be completed, and the procedure for evaluating the results of the study. The sponsoring faculty member will determine the credit hours for the experience and assign the final grade. Students may accrue a maximum of 6 credit hours by enrolling in this course, or GDSP 2000 Guided Studies-Individual, multiple times; each with a different guided studies activity. Before registering for this course, the students must obtain approval from the Guided Studies Committee for each proposal.

HEALTH INFORMATION MANAGEMENT TECHNOLOGY

HIMT 1100 Introduction to Health Information Data Management **3 Credits**

Prerequisite: admission to Health Information Management Technology program

This course introduces students to the various roles of the health information management technician within the healthcare system and professional organizations in which the health information management technician is affiliated. Students will explore the various functions performed under the auspices of health information management; the technology used to perform these functions; and purposes, uses, and flow of patient information through the healthcare delivery system. Students will also gain an introduction to the use and structure of healthcare data elements, data sets, and data standards, and their relationship to primary and secondary record systems and health information processing. (3 contact hours)

HIMT 1200 Healthcare Records and Documentation **3 Credits**

Prerequisite: HIMT 1100

Students will learn how to complete documentation requirements for complete and accurate health records as required by licensing, certifying, and accreditation agencies. They will develop an understanding of forms design, functions of assembly, analysis, and abstracting. Students will also learn how to illustrate the flow of health information in various healthcare delivery systems and within the health information department, and retrieve data from health records, using professional ethics, confidentiality, and security of information. The course will also discuss the topics of electronic health concepts, safety, homeland security, HIPAA, and cost. (5 contact hours: 2 lecture, 3 lab)

HIMT 1220 Coding and Classification Systems: HCPCS/CPT **3 Credits**

Prerequisite: HLTH 2100 or HLTH 1238

In this introductory Health Care Common Procedure Coding (HCPCS) coding class, which includes Current Procedural Terminology (CPT), students will learn the history and structure of the HCPCS medical classification system that is used to describe and report procedures for physician and outpatient claims. Students will attain basic HCPCS coding skills in order to apply this coding system in a variety of provider settings and develop an understanding of the impact these codes have on provider reimbursement, internal reporting, and statistical and quality reporting needs within the healthcare industry. (5 contact hours: 2 lecture, 3 lab)

HIMT 1240 Ethics and Legal Issues for Health Information Management **(TAG)** **2 Credits**

Prerequisite: HIMT 1100 (can be taken concurrently)

Students will study legal aspects of medical record practice, an overview of judicial system and processes, the importance of medical record as a legal document, and the effect of confidentiality on release of medical information. They will also gain practice in the release of information function, record retention, and destruction of records. The course also discusses current legal issues, ethics, and laws. (2 contact hours)

HIMT 1300 Healthcare Applied Information Systems and Services **3 Credits**

Prerequisite: HIMT 1100, ITIS 1005

Students will learn more about the role of information technology in healthcare through an investigation of the electronic health record, business, and health information software applications. They will also learn how to assist in information systems design and implementation. (5 contact hours: 2 lecture, 3 lab)

HIMT 2050 Coding and Coding Classification Systems: ICD-10-CM and ICD-10-PCS **3 Credits**

Prerequisite: HLTH 2100 or HLTH 1238

In this introductory ICD-10-CM and ICD-10-PCS coding class, students will learn the history and structure of the ICD-10-CM and ICD-10-PCS medical classification system that is used to describe and report diagnoses and procedures. Students will attain basic ICD-10-CM and ICD-10-PCS coding skills in order to apply this coding system in a variety of provider settings and develop an understanding of the impact these codes have on provider reimbursement, internal reporting, and statistical and quality reporting needs within the healthcare industry. Students will also explore other classification and vocabulary systems such as DSM-IV and SNOMED-CT. (5 contact hours: 2 lecture, 3 lab)

HIMT 2150 Data Delivery and Quality Assessment **3 Credits**

Prerequisite: HIMT 1200, HIMT 1240, HIMT 1300

Students will gain an introduction to the internal and external requirements for establishing, operating, and maintaining quality improvement and utilization management programs. The course will discuss methods used in benchmarking, credentialing, critical pathways, monitoring, case management and evaluation, occurrence screening, peer review, and risk management, with a focus on AHIMA standards. Students will explore the management of medical data for statistical purposes with a focus on descriptive statistics, including definitions, collection, calculation, compilation, and display of numerical data. They will examine vital statistics, registries, and research, and will properly collect, organize, display, and interpret healthcare data to meet the needs of various users while complying with the standards of the healthcare facility. (5 contact hours: 2 lecture, 3 lab)

HIMT 2530 Reimbursement Methodologies **(TAG) 2 Credits**

Prerequisite: HIMT 1220, HIMT 2050

Students will explore how the U.S. healthcare reimbursement system functions from the perspective of the patient, the payer, and the provider. They will learn how the government and other third party payers reimburse hospitals, ambulatory surgical centers, physicians, and other healthcare providers through a prospective payment system. (2 contact hours)

HIMT 2540 Advanced Coding **3 Credits**

Prerequisite: HIMT 1220, HIMT 2050

Having already attained their basic coding skill, students will focus on case studies to determine diagnoses and procedure coding utilizing both ICD-9-CM and CPT-4. They will examine medical records and learn how to interpret actual charts, adhere to coding regulations and guidelines in code assignments, and ensure accuracy of diagnoses/procedure groupings such as DRG, APC, etc. (5 contact hours: 2 lecture, 3 lab)

HIMT 2545 Clinical Practicum I **3 Credits**

Prerequisite: HIMT 1200, HIMT 1240, HIMT 1300, HIMT 2546 (must be taken concurrently)

Students will work in an area healthcare facility under the supervision of facility personnel in order to obtain exposure to actual working conditions and gain experience in various aspects of health information management services. (18 contact hours: 18 clinical)

HIMT 2546 Seminar I **1 Credit**

Prerequisite: HIMT 1200, HIMT 1240, HIMT 1300, HIMT 2545 (must be taken concurrently)

This course provides a forum for reviewing and integrating previous course work with the clinical experience. Students will meet to share and discuss clinical situations. They will also explore the latest trends in Health Information Management Technology along with professional development requirements and opportunities. (1 contact hour)

HIMT 2550 Clinical Practicum II **3 Credits**

Prerequisite: HIMT 1220, HIMT 2050, HIMT 2530 (can be taken concurrently), HIMT 2540 (can be taken concurrently), HIMT 2545, HIMT 2546, HIMT 2600 (must be taken concurrently)

Under the instruction of a health information professional, students will apply their knowledge and skills in a health information management setting with the employer developing an individualized plan relating to the workplace training and experiences. (18 contact hours: 18 clinical)

HIMT 2600 Seminar II **1 Credit**

Prerequisite: HIMT 1220, HIMT 2050, HIMT 2530 (can be taken concurrently), HIMT 2540 (can be taken concurrently), HIMT 2545, HIMT 2546, HIMT 2550 (must be taken concurrently)

This course provides a forum for reviewing and integrating previous course work with the clinical experience. Students will meet to share and discuss clinical situations. The course also specializes in issues and trends in Health Information Management Technology, employment opportunities, interviewing techniques, resume writing, and job seeking skills. (1 contact hour)

HEALTHCARE SERVICES

HLTH 1010 Introduction to Health Careers **2 Credits**

This course introduces students to varied careers in healthcare and the educational, legal, and professional requirements of those careers. Course work includes researching healthcare professions and corresponding education at Lakeland Community College, the use of electronic media in healthcare, workplace readiness skills, and the characteristics of successful healthcare employees. (2 contact hours)

HLTH 1100 Introduction to U.S. Health Care System **2 Credits**

This course provides an introduction to the various aspects and trends that affect healthcare professions and healthcare systems, including federal regulations, credentialing, economics, and population changes. (2 contact hours)

HLTH 1150 Introduction to Electronic Health Records **1 Credit**

Prerequisite: HLTH 1215 or permission of instructor

Students will learn about the use of Electronic Health Records (EHR) in healthcare including EHR documentation basics. They will also learn terminology and examine security issues associated with EHRs. Students should be experienced with the use of Windows-based software. Although it is not a prerequisite for this course, students with little or no computer experience will benefit from having taken ITIS 0800 Computer Skill Development prior to taking this course. (1 contact hour)

HLTH 1215 Medical Terminology for Health Professions **(TAG) 3 Credits**

This course introduces medical terminology used by personnel in hospitals and other health-related fields. It places emphasis on terms related to normal anatomy and physiology, common disease conditions, operative techniques, diagnostic measures, and various methods of treatment. The course focuses on the urinary, gastrointestinal, nervous, respiratory, cardiovascular, eye and ear, musculoskeletal, reproductive, blood, endocrine, lymphatic, and skin systems and oncology and psychiatry terminology. (3 contact hours)

HLTH 1238 Structure, Function, Disease, and Therapeutics of the Human Body **4 Credits**

This course introduces students to basic human body structure and function using the body-systems approach. It emphasizes the interrelationships between body system structure and function with common diseases, diagnostic tests and treatments. (4 contact hours)

HLTH 1240 Phlebotomy **3 Credits**

Prerequisite: HLTH 1215, admission to the Phlebotomy program or admission to the Medical Assisting program or permission of the Phlebotomy program coordinator

This course introduces and reinforces the theory and practice of phlebotomy. Students will become familiar with the evacuated tube, syringe, butterfly, and capillary methods of blood collection. The course also introduces point-of-care testing and CLIA-waived laboratory test procedures along with collection, processing, and handling of nonblood and blood samples. It explores errors in the pre-analytical process and their effect on laboratory results. Laboratory procedures include venipuncture, capillary puncture, and point-of-care testing. (5 contact hours: 2 lecture, 3 lab)

HLTH 1254 Home Health Aide **1 Credit**

Prerequisite: Current State Tested Nursing Assistant certification

This course provides students with knowledge and skills to perform as a homemaker- home health aide. Students will study communication, health and safety issues and strategies, and methods of providing holistic care to clients with culturally diverse and special needs backgrounds. (2 contact hours: 0.5 lecture, 1.5 lab)

HLTH 1256 Acute Care Specialty **2 Credits**

Prerequisite: Current State Tested Nursing Assistant certification

This course provides students with knowledge and skills to perform as an aide in an adult acute care setting. Students will study adult daily living skills, infection control practices, nutritional basics, adult mobility concepts, and safety and legal issues. (4 contact hours: 1 lecture, 3 lab)

HLTH 1260 Phlebotomy Clinical Practicum **2 Credits**

Prerequisite: HLTH 1240, HLTH 1265 (must be taken concurrently)

This course specializes in the practice of phlebotomy procedures as performed by students in the clinical laboratory or associated facilities, with practical application of phlebotomy techniques learned in HLTH 1240 Phlebotomy. (12 contact hours: 12 clinical)

HLTH 1265 Phlebotomy Seminar **1 Credit**

Prerequisite: HLTH 1260 (must be taken concurrently)

This course specializes in the issues and trends in healthcare, including ethics and law, government regulations, professional development, employment opportunities, interviewing techniques, resume writing and job seeking skills. The course includes discussion of practicum experiences. (1 contact hour)

HLTH 1300 Nutrition and Family Health **(TAG) 2 Credits**

This course provides non-nursing majors with an overview of basic nutrition principles. Students will investigate nutrition goals, requirements, and problems of young adults, older adults, pregnant women, infants, preschoolers, children, and adolescents. Students will learn to evaluate food products for their nutritional value, using reliable nutrition information, food guides, and food labels. The course places emphasis on energy balance and maintaining good health by making good nutrition choices. (2 contact hours)

HLTH 1310 Nutrition and Diet Therapy **2 Credits**

This course, designed for nursing students, provides fundamental theoretical knowledge related to the basic principles of nutrition. It places emphasis on the practical application of these principles to diet therapy requirements for maintenance of wellness in all age groups. Although it is not a prerequisite for this course, students will benefit from having taken BIOL 1200 Fundamentals of Biology for the Health Technologies prior to taking this course. (2 contact hours)

HLTH 1400 Customer Service in Healthcare **2 Credits**

This course explores the definition and characteristics of healthcare customers and the importance of customer service in today's competitive healthcare market. It emphasizes patient rights and responsibilities, complaint resolution, verbal and non-verbal communication, telephone etiquette and interviewing skills, and laws and regulations as they apply to customer service. (2 contact hours)

HLTH 1500 Ethics and Legal Issues for Health Professionals **2 Credits**

This course provides an introduction to basic ethical and legal concepts, ethical decision-making processes, and current issues in ethics. Selected classroom experiences provide students with the opportunity to consider and debate current ethical dilemmas. (2 contact hours)

HLTH 1600 Basic Pharmacology **2 Credits**

Prerequisite: HLTH 1215 (can be taken concurrently), MATH 0745 or placement into MATH 0850 or NURS 0900

This course introduces basic principles and concepts of pharmacology, including dosage calculations, drug classifications and uses, sources of drugs, storage and handling of medications, prescribing and dispensing drugs, drug abuse and the role of the healthcare provider concerning medications. The course includes record keeping, documentation and legal concerns. (2 contact hours)

HLTH 1700 Basic Electrocardiography **2 Credits**

Prerequisite: HLTH 1215

This course provides fundamental knowledge of electrocardiography testing, including the anatomy and physiology of the heart and circulatory system, electrophysiology, electrocardiography techniques, and common arrhythmia. Students must provide their own calipers. (2 contact hours)

HLTH 2100 Pathophysiology **(TM, TAG) 3 Credits**

Prerequisite: BIOL 2220 or certification in a health profession

This course provides an introduction to the fundamental concepts of disease processes and specific disorders of the major body systems. It is designed for students or practitioners in the health professions who desire to increase their understanding of the changes occurring in physiology due to an abnormality. (3 contact hours)

HISTORY

HIST 1150 Western Civilization I: Antiquity through the Reformation **(TM, TAG) 3 Credits**

This course provides a survey of the origins and growth of the social, religious, political, and economic foundations of Western European culture through the end of the Reformation, concluding in 1648. (3 contact hours)

HIST 1250 Western Civilization II: Age of Revolution through the Present **(TM, TAG) 3 Credits**

This course provides a survey of the development of modern European society from the age of absolutism to the present. It is designed to provide students with an understanding of the political, religious, economic, intellectual, and cultural evolution of the western tradition from 1648 to the present. (3 contact hours)

HIST 1450 World Civilization I: The Ancient and Medieval World **(TM, TAG) 3 Credits**

This course is a survey of world history from its earliest origins in the Near East through 1500. It is designed to provide students with an understanding of the Western and non-Western political, religious, economic, intellectual, and cultural evolution of world history. (3 contact hours)

HIST 1550 World Civilization II: The Modern World **(TM, TAG) 3 Credits**

The course explores the development of the world from 1500 to the present. It is designed to provide students with an understanding of the key facets of non-Western and Western social, political, economic, cultural, religious, and intellectual history. (3 contact hours)

HIST 1700 Model UN/Model NATO **1 Credit**

This course is intended to prepare students to participate effectively in Model United Nations (MUN) and Model North Atlantic Treaty Organization (MNATO) conferences. Students will learn about current global issues and the ways in which these important international organizations work to address them. During the semester, students will learn how to research a country's foreign policy positions, develop strategies to address important internal problems, effectively advocate a country's position through application of appropriate debate skills, and develop skills in employing rules of parliamentary procedure, negotiation and compromise, consensus building, and resolution-writing. Throughout the semester, students will participate in Model UN and NATO conferences as well as help organize an MUN/NATO conference at Lakeland. This course is cross-listed as HIST 1700 Model UN/Model NATO and POLS 1700 Model UN/Model NATO. Students who have taken the course under the alternate course ID should not take this course. (1 contact hour)

HIST 2150 U.S. History: Colonization Through Reconstruction **(TM, TAG) 3 Credits**

This in-depth course examines the factors, from the sixteenth through the third quarter of the nineteenth century, which resulted in the creation of the unique American civilization. The course emphasizes the interaction between the American demographical and geographical environment, and the cultural influence of European colonists along with African contributions. It also focuses on the political, economic, cultural, and social developments that brought about the Civil War and attempts at Reconstruction. (3 contact hours)

HIST 2250 U.S. History: Reconstruction to the Present **(TM, TAG) 3 Credits**

This course traces the development of the United States from the conclusion of Reconstruction (1877) to the present. It examines those components that transformed the United States into a world power and the changes in the role and position of the government in the lives of its people and institutions. (3 contact hours)

HIST 2450 Women in U.S. History **(TM) 2 Credits**

This course explores the experience of women, as well as ideas and relations of gender, as part of the larger history of nineteenth and twentieth century America. It surveys the social, cultural, legal, economic, and political developments that shaped women's lives and women's participation in and response to these changes. (2 contact hours)

HIST 2600 Ohio History **(TM) 3 Credits**

This course provides an in-depth survey of the history of the region from prehistoric times through the twentieth century. It emphasizes the political, economic, and social forces that made Ohio a unique state in the Union. The course focuses on active learning through field visits to regional historical agencies combined with group discussions and presentations. (3 contact hours)

HIST 2700 Vietnam Era and Its Legacy **(TM) 3 Credits**

This specialized course examines the forces that led the United States into involvement in Indochina. Initially this course focuses on the Southeast Asian cultural and historical environment, followed by a detailed look at the French experience in the region. It emphasizes key decisions of influential decision-makers that guided America's involvement in this war and why they failed to see the looming potential for disaster. The course examines how this war affected America culturally, economically, politically, and socially, both during the war and in the decades that followed. Finally the course draws conclusions about how the country has continued to be affected by the war in succeeding generations. (3 contact hours)

HIST 2750 Latin American History **3 Credits**

This course provides an in-depth overview of Latin American history from prehistoric times to the present, tracing ancient and colonial influences, 20th century revolutions, dictatorships, the growth of democracy, and the evolution of global economics on modern nations of the area. The course emphasizes the political, economic, and social development of Cuba, Mexico, Brazil, Argentina, and Chile, but will discuss all nations and peoples, as well as the role the United States has played in both helping and hindering Latin American development. (3 contact hours)

HIST 2900 Special Topics in History **2-3 Credits**

These specialized courses provide in-depth examinations of historical issues, problems, or periods not covered in detail elsewhere in the curriculum.

HISTOTECHNOLOGY

HSTY 1100 Introduction to Histotechnology **4 Credits**

Prerequisite: admission to the Histotechnology program

This course provides an introduction to histology laboratory operations, cellular morphology, and the professional responsibilities of the histotechnician. The course emphasizes organization, terminology, specimen accession, record keeping, quality assurance, OSHA regulations, quality improvement, principles and concepts of medical ethics, and legal issues. Upon completion of the course, students should be able to describe the requirements and responsibilities in the daily operation of a histology laboratory. (6 contact hours: 3 lecture, 3 lab)

HSTY 2050 Histochemistry **4 Credits**

Prerequisite: HSTY 1100

This course provides practical and theoretical training in specialized staining techniques used in diagnostic pathology. Laboratory procedures include performing stains used to identify nuclear characteristics, cytoplasmic characteristics, carbohydrates, lipids, pigments, nervous tissue, and enzymes. (8 contact hours: 2 lecture, 6 lab)

HSTY 2100 Histology **3 Credits**

Prerequisite: HSTY 1100

This course specializes in the study of cells, tissues, and organ systems. Students will learn to identify various types of tissue, including epithelial cells, muscle cells, connective tissue, and nerve tissue. The course emphasizes anatomical and functional relationships of tissue. (5 contact hours: 2 lecture, 3 lab)

HSTY 2151 Specialty Areas in Histotechnology **3 Credits**

Prerequisite: admission to Histotechnology or permission of program director

This course provides in-depth examination of non-routine specialty areas that a histotechnician may encounter in the workplace. Topics include immunohistochemistry, autopsy procedures, electron microscopy, molecular diagnostics, grossing, Mohs, and cytoprep techniques. The course will also explore quality management and the inspection process. (3 contact hours)

HSTY 2210 Fundamentals in Clinical Immunology **2 Credits**

Prerequisite: admission to Histotechnology or Medical Laboratory Technology program or permission of program director

This course covers the human immune system, including the characteristics of antigens and antibodies, cellular interactions, and types of immune response and complement. It also addresses infectious diseases and the body's immunological response to them, along with autoimmune deficiency disorders and hypersensitivity. (2 contact hours)

HSTY 2250 Histotechnique **3 Credits**

Prerequisite: HSTY 1100

This course specializes in standard methods used for the preparation of tissue slides for microscopic study by pathologists in their diagnosis of tissue pathology. Laboratory procedures include fixation of tissues, paraffin embedding, sectioning, and basic staining. Student will develop dexterity, speed, and precision in using a microtome. (7 contact hours: 1 lecture, 6 lab)

HSTY 2300 Histotechnician Clinical Directed Practice **6 Credits**

Prerequisite: HSTY 1100, HSTY 2050, HSTY 2100, HSTY 2151, HSTY 2210, HSTY 2250, HSTY 2400 (must be taken concurrently)

This course includes the practical application of histology procedures learned in previous histology courses. Students will gain experience in histology laboratory procedures in a hospital histology laboratory or associated facilities. (30 contact hours: 30 clinical)

HSTY 2400 Histotechnician Seminar **2 Credits**

Prerequisite: HSTY 2300 (must be taken concurrently)

This course specializes in issues and trends in histology, healthcare ethics and law, government regulations, professional development, employment opportunities, interviewing techniques, resume writing, and job seeking skills. The course uses case studies to integrate previous course work with clinical experience. (2 contact hours)

HUMAN SERVICES

HMSV 1115 Introduction to Human Services **3 Credits**

Prerequisite: placement into ENGL 1110 or placement into ENGL 1111

This course provides an overview of the principles and core competencies of professional practice as a social work assistant. Students will explore the diverse career options available in the field of human services and evaluate the match of their interests and skills with the realities and requirements of the field. (3 contact hours)

HMSV 1118 Principles of Case Management **3 Credits**

Prerequisite: a grade of "C" or better in ENGL 1110 or a grade of "C" or better in ENGL 1111, a grade of "C" or better in HMSV 1115, a grade of "C" or better in PHIL 1300; or permission of program chair

This course introduces entry-level human service workers to a general framework for the principles and skills needed for effective professional case management practice. The focus on skill building provides students with the opportunity to develop and practice basic clinical competency as a human service worker. (3 contact hours)

HMSV 1120 Fundamentals of the Helping Process **3 Credits**

Prerequisite: a grade of "C" or better in COMM 1100, a grade of "C" or better in HMSV 1115, a grade of "C" or better in PHIL 1300; or permission of program chair

This course provides an introduction to fundamentals of the helping process. Students will acquire knowledge about theory-directed practice, explore core values and ethics of the profession, and begin development of basic professional skills essential for clinical interviewing and collaborative relationship-building. This course will foster proficiency in entry-level generalist competencies through a participative scaffolding approach utilizing demonstration, observation, role plays, constructive feedback, peer review, and self-monitoring. (3 contact hours)

HMSV 1131 Positive Behavior Support for Developmental Disabilities **2 Credits**

This course explores the fundamental principles of behavior management, highlights relevant terminology, and discusses the rationale for use of behavior modification in working with persons who are developmentally disabled. Students will learn essential concepts underlying the design and implementation of behavior management programming. The course meets a portion of the requirements for persons applying for the Adult Services certification in the State of Ohio and meets the requirement for renewing this certification. (2 contact hours)

HMSV 1132 Introduction to Developmental Disabilities **2 Credits**

This course provides an introduction to the phenomena of developmental disabilities. Students will learn the definitions, classification systems, causes, and etiologies. Students will examine current trends and issues regarding service provision. The course meets a portion of the requirements for persons applying for the Adult Services certification in the State of Ohio and meets the requirement for renewing this certification. (2 contact hours)

HMSV 1133 Principles of Habilitation Programming **3 Credits**

Prerequisite: HMSV 1131

This course provides an introduction to the various disciplines involved in the assessment, planning, and implementation of individual habilitation plans for developmentally-disabled individuals. Students will learn the process by which services are provided and the theoretical knowledge and practical application of habilitation programming. Students will examine the relationship of habilitation to other interdisciplinary fields including physical therapy, occupational therapy, speech therapy/audiology, social work, special education, psychology, nursing, behavior management, adaptive recreation, residential case management, and administration. The course meets the renewal requirements for the Adult Services and Qualified Mental Retardation Professional (QMRP) certification. (3 contact hours)

HMSV 1138 Work Adjustment for the Developmentally Disabled **2 Credits**

This course introduces students to the fundamental principles necessary for providing a coordinated work adjustment program for individuals with developmental disabilities. Students will learn normalization principles, vocational assessment and evaluation techniques, basic rehabilitation engineering, and behavior management techniques used in work adjustment. This course meets a portion of the requirements for persons applying for the Adult Services certification in the State of Ohio and meets the requirement for renewing this certification. It is also applicable for the renewal of the Qualified Mental Retardation Professional (QMRP) certification. (2 contact hours)

HMSV 1139 Principles of Work for Developmentally Disabilities **2 Credits**

This course introduces students to the basics of providing work experiences and opportunities to persons with developmental disabilities in both community and sheltered environments. Students will learn regulatory and safety requirements, the work procurement process techniques for increasing work opportunities, and methods for enhancing work performance. The course meets a portion of the requirements for persons applying for the Adult Services certification in the State of Ohio, and is also applicable toward renewal of this certification. (2 contact hours)

HMSV 1170 Management Skills in Non-Profit Organizations **3 Credits**

This course provides an overview of management/supervisory principles and practices as they apply to non-profit organizations. Students will learn the history, essence and philosophy of nonprofits as well as the elements of supervising, motivating, communicating, and developing practices for organizational collaborative decision making. Students will also learn the differences between managing in the nonprofit sector and the public and private for-profit sectors. (3 contact hours)

HMSV 1215 Dealing with Diversity **3 Credits**

Prerequisite: placement into ENGL 1110 or placement into ENGL 1111

This course provides an overview of the various bases of diversity in society and examines how attitudes regarding diversity develop and can be changed. Students will examine the consequences of institutional biases and various models of analysis. (3 contact hours)

HMSV 2116 Social Welfare **(TAG) 3 Credits**

Prerequisite: a grade of "C" or better in ENGL 1120, a grade of "C" or better in HMSV 1118, a grade of "C" or better in POLS 1300, a grade of "C" or better in SOCY 2250; or permission of program chair

This course provides the student with an overview of the social welfare system in the United States including the history and development, trends, and current issues. The course explores social dynamics that impact access to the system, such as discrimination and oppression. It also examines conflicts and controversies that surround the social welfare system including the nature and causes of social welfare problems as well as their potential ramifications and solutions. (3 contact hours)

HMSV 2200 Motivational Interviewing **3 Credits**

Prerequisite: a grade of "C" or better in HMSV 1120 or permission of program chair

This course introduces the concepts, skills, and techniques of motivational interviewing. Students will have opportunities to develop proficiency through observation, written responses, and role plays utilizing this "best evidence approach" to supporting clients through the process of change. (3 contact hours)

HMSV 2220 Effective Volunteer Management **3 Credits**

This course provides basic ideas and strategies which will enable the volunteer manager to develop and/or manage an effective volunteer program in a nonprofit organization. (3 contact hours)

HMSV 2230 Fundamentals of Addiction Counseling **3 Credits**

Prerequisite: a grade of "C" or better in HMSV 1120, a grade of "C" or better in SOCY 1190; or permission of program chair

Students will learn about addiction theory, professional practice standards, prevention and treatment intervention skills, assessment and evaluation procedures, and social, political, economic and cultural influences in addiction counseling through active participation including observation, experiential activities, audio/video recording, written assignments, constructive feedback, and self monitoring. This course helps students prepare for the first level Chemical Dependency Counselor Assistant (CDCA) Certification. (3 contact hours)

HMSV 2284 Human Services Internship Preparation **2 Credits**

Prerequisite: a grade of "C" or better in HMSV 1120, a grade of "C" or better in HMSV 1118, a grade of "C" or better in HMSV 1215, a grade of "C" or better in PSYC 1500, a grade of "C" or better in SOCY 1190, intention to complete HMSV 2285 the following semester

This course prepares students for their capstone internship experience for the Associate of Applied Science in Human Services degree. Students will complete the application process and emerge from the course with a professional resume, effective job interviewing skills, solid understanding of performance expectations, and a time-management and self-care plan. Students will also identify potential placement sites, secure, and complete up to three agency interviews, and complete all necessary paperwork including a criminal background check. A student's ability to secure a placement site by the end of this course is directly related to meeting established eligibility requirements for student and site as well as demonstrating a high level of professional knowledge, skills, and attitudes during agency interviews. Internship invitations are at the discretion of each agency and must be approved by the Human Services Program Director. (2 contact hours)

HMSV 2285 Human Services Internship and Seminar **3 Credits**

Prerequisite: permission of Human Services program director, HMSV 2116 (can be taken concurrently), HMSV 2200, HMSV 2230, HMSV 2284, PHIL 2700 (can be taken concurrently), a grade of "C" or better in all courses required for the degree

This is the capstone course for the Associate of Applied Science in Human Services degree. The focus is on the integration and demonstration of the attitudes, values, knowledge, and skills necessary for effective direct practice within the scope of practice for a generalist social work assistant. This course requires a 210-hour field experience in which students will apply their accumulated knowledge and skills in a human services environment. (15 contact hours: 1 lecture, 14 lab)

HUMANITIES

HUMX 1100 Introduction to Humanities **(TM) 3 Credits**

This introductory course explores the impact of the humanities on people's lives. Emphasis is placed on understanding an artist's message as expressed through music, art, architecture, literature, and film. The course also focuses on the common bonds of humanity. (3 contact hours)

HUMX 1200 The American Experience in the Arts **(TM) 3 Credits**

This lecture/discussion course specializes in the particular nature of the environmental factors at work on the American art scene and examines the universal implications of the American experience. (3 contact hours)

HUMX 1300 Human Issues: Choices in a Contemporary Society **(TM) 3 Credits**

This course specializes in the art of being human, emphasizing the issue of self-interest versus social concern. Students will examine various theories of love, morality, happiness, the changing roles of men and women, and the American family through the exploration of literature, music, film, and the visual arts. (3 contact hours)

HUMX 1400 Reflections of Evil in the Humanities **3 Credits**

This introductory course identifies the nature of evil from multiple perspectives, thus exploring its impact on historical occurrences and contemporary life. It emphasizes understanding the nature of evil as expressed through painting, sculpture, film and literature, and philosophy. (3 contact hours)

HUMX 1500 Dream Quest: History, Symbolism, and Meanings **3 Credits**

This course will examine the significance and meaning of dreams in various cultures and time periods. Once earlier interpretations and perspectives have been assessed, students will study dream theories of psychologists with a focus on those of Freud and Jung. Students will also have the opportunity to participate in personal "dream work," and the chance to interpret dreams for themselves. (3 contact hours)

HUMX 2900 Special Topics in the Humanities **3 Credits**

These specialized courses provide in-depth examinations of humanities topics not covered in detail elsewhere in the curriculum. Courses will focus on topics such as the aesthetics of beauty, women writers, artists, and musicians through the ages.

INFORMATION LITERACY

INFL 1100 Information Skills for the Information Age **1 Credit**

This course will teach students the information literacy skills necessary for professional and personal success in the evolving information environment. Students will define a project to serve as a vehicle for acquiring information literacy skills throughout the course and will examine a variety of quality information resources and learn best research practices. They will learn how to design accurate search strategies, analyze the value of sources based on content and relevance to their information need, and apply ethical methods of acquiring, managing, and citing information from both print and digital sources. (1 contact hour)

INFORMATION TECHNOLOGY AND COMPUTER SCIENCE

Information Technology - Computer Science (ITCS)

ITCS 1010 Programming Logic **3 Credits**

Prerequisite: ITIS 1005, a grade of "SC" or better in MATH 0850 or placement test; or permission of instructor

This course provides an introduction to problem-solving techniques, the steps of the program development cycle, and fundamental skills needed for programming in any computer language. Students will develop logic plans and create programs using core programming instructions to solve a variety of problems and will use one or more programming languages to gain experience with the complete program development process. The course includes an introduction to object-oriented and event-driven programming and to the Visual Studio.NET development environment. (4.5 contact hours: 1.5 lecture, 3 lab)

ITCS 1105 Web Programming I **3 Credits**

Prerequisite: GRDS 1375 or ITCS 1010 and ITIS 1100; or permission of instructor

This course provides introductory and intermediate techniques using the current version of HTML (Hypertext Markup Language) to create and manage web pages. Students will explore ways of presenting text, data, and graphics in a browser based environment. Students will explore the use of several HTML editing tools to aid in site management. (4.5 contact hours: 1.5 lecture, 3 lab)

ITCS 1810 Visual Basic.NET Programming I **3 Credits**

Prerequisite: ITCS 1010, ITON 1050; or permission of instructor

This course provides an introduction to application development, user interface design, current standard Windows program development methodologies, object-oriented programming, and the Visual Basic.NET development system. Students will use Visual Basic.NET to connect to database applications using ActiveX controls, develop objects, create multiple forms, print reports, and use text files and various array types. (5 contact hours: 1 lecture, 4 lab)

ITCS 1820 Java Programming I **3 Credits**

Prerequisite: ITCS 1010, ITON 1050; or permission of instructor

This course provides an introduction to application development, object-oriented programming, and the Java development system. Students will write object-oriented Java applications and applets using methods, variables, operators, strings, arrays, loops, selection statements, classes, inheritance, and encapsulation. (5 contact hours: 1 lecture, 4 lab)

ITCS 1825 Programming I for iOS **3 Credits**

Prerequisite: ITCS 1010, ITON 1050; or permission of instructor

This course introduces students to Apple's current development language and object-oriented programming concepts. Students will write programs using classes, methods, input/output, inheritance, and polymorphism for the iPhone/iPad. (5 contact hours: 1 lecture, 4 lab)

ITCS 1870 Python Programming I **3 Credits**

Prerequisite: ITCS 1010; ITON 1050 or ITON 1060 or GEOG 2700; or permission of instructor

This course introduces students to the Python programming language. Students will write procedural and object-oriented applications. Student programs will include arithmetic operations, strings, functions, decisions and loops, and object-oriented constructs. (5 contact hours: 1 lecture, 4 lab)

ITCS 2010 Systems Analysis **3 Credits**

Prerequisite: ENGL 1120 or ENGL 1121, ITCS 1010, ITIS 1115 (can be taken concurrently) or ITON 1205 (can be taken concurrently) or CNET 1100 (can be taken concurrently); or permission of instructor

This course provides an in-depth experience of the business information systems development process, with emphasis on the investigation, analysis, and design phases. Students will study the role of the systems analyst, examine and apply tools used for system design, and, through participation in a team project and presentation, gain experience with the design of a business information system. (4 contact hours: 2.5 lecture, 1.5 lab)

ITCS 2012 Discrete Structures **3 Credits**

Prerequisite: MATH 1650 or higher, CPET 1120 or ITCS 1810 or ITCS 1820 or ITCS 1840 or ITCS 1870; or permission of instructor

This course provides an introduction to the foundations of discrete mathematics as they apply to computer science, and focuses on providing a solid theoretical foundation for further work. Topics include logic, set algebra, equivalence relations and partitions, functions, mathematical induction, cardinality, recurrence relations, basic combinatorial methods, and trees and graphs; with an emphasis on applications in computer science. (3 contact hours)

ITCS 2080 Fundamentals of Software Engineering **3 Credits**

Prerequisite: ITCS 1810 or ITCS 1820 or ITCS 1840 or ITCS 1870; or permission of instructor

This course introduces the basic principles and concepts of software engineering and provides the necessary foundation for subsequent SE courses at the upper division level. Topics include: basic terminology and concepts of software engineering; system requirements, modeling, and testing; object oriented analysis and design using UML; frameworks and APIs; client-server architecture; user interface technology; and the analysis, design, and programming of simple servers and clients. (4 contact hours: 2.5 lecture, 1.5 lab)

ITCS 2105 Web Programming II **3 Credits**

Prerequisite: ITCS 1105, ITCS 1820, ITCS 2120 (can be taken concurrently); or permission of instructor

This course introduces intermediate and advanced techniques using various markup languages for the Internet in a microcomputer environment. Students will use previously mastered procedural and object-oriented techniques and concepts to develop complex programs using intermediate XHTML, CSS, XML, Internet programming languages, and other advanced techniques as the languages and protocols evolve. Students will also learn the vocabulary and process of group based code and user interface review. Students who have taken the prerequisite courses more than two years prior to attempting this course may wish to retake those courses before attempting ITCS 2105 to ensure current knowledge of the information and the profession. (5 contact hours: 1 lecture, 4 lab)

ITCS 2120 JavaScript Programming I **3 Credits**

Prerequisite: ITCS 1810 or ITCS 1820 or ITCS 1840 or ITCS 1870, ITCS 1105; or permission of instructor

This course introduces JavaScript programming in a hands-on microcomputer environment. JavaScript programming is used extensively in web page design to allow information to be processed on a web page before being sent to a web server for processing. Students will also learn the vocabulary and process of group based code and user interface review. Students who have taken the prerequisite courses more than two years prior to attempting this course may wish to retake those courses before attempting ITCS 2120 to ensure current knowledge of the information and the profession. (4.5 contact hours: 1.5 lecture, 3 lab)

ITCS 2170 Introduction to ASP.NET **2 Credits**

Prerequisite: ITCS 1010, ITCS 1105, ITDB 1400; or permission of instructor

This course introduces ASP.NET programming for the Internet in a microcomputer environment. Students will study intermediate HTML, Web scripting, and other advanced techniques to create dynamic Web applications using server-side technology with ASP.NET. (3.25 contact hours: 0.75 lecture, 2.5 lab)

ITCS 2820 Java/Android Programming II **3 Credits**

Prerequisite: ITCS 1820, ITDB 1400 (can be taken concurrently) or ITDB 1430 (can be taken concurrently); or permission of instructor

This course provides advanced instruction in current standard Java program development methodologies and object-oriented programming with an emphasis on mobile application development. Students will use mobile class libraries and J2ME (Java 2 Micro Edition) to create applications for mobile devices. (5 contact hours: 1 lecture, 4 lab)

ITCS 2821 Java/Android Programming III **2 Credits**

Prerequisite: ITCS 2820

This course provides advanced instruction in Android's current development environment with an emphasis on designing, creating and publishing professional Android mobile applications. (3.5 contact hours: 0.5 lecture, 3 lab)

ITCS 2825 Programming II for iOS **3 Credits**

Prerequisite: ITCS 1825, ITDB 1400 (can be taken concurrently) or ITDB 1430 (can be taken concurrently; or permission of instructor

This course provides advanced instruction in Apple's current development language methodologies and object-oriented programming with an emphasis on mobile application development. Students will use mobile class libraries and the Apple Coco class library to create applications for mobile devices. (5 contact hours: 1 lecture, 4 lab)

ITCS 2826 Programming III for iOS **2 Credits**

Prerequisite: ITCS 2825

This course provides advanced instruction in Apple's current development environment with an emphasis on designing, creating and publishing professional iOS mobile applications. (3.5 contact hours: 0.5 lecture, 3 lab)

ITCS 2870 Data Structures **4 Credits**

Prerequisite: ITCS 1870, MATH 2500; or permission of instructor

This traditional computer science course introduces students to advanced data structure concepts including objects and inheritance, algorithm analysis, recursion, stacks, queues, lists, randomization, trees, sorting and searching, hash tables, and graphs and paths. (6 contact hours: 2 lecture, 4 lab)

ITCS 2875 Computer Architecture and Organization **3 Credits**

Prerequisite: ITCS 2870, ITON 1011, MATH 2500; or permission of instructor

This course provides a study of the principles of Von Neumann computer architecture, data representation, and memory addressing as well as processor organization and its impact on system and application software. It also includes discussion and utilization of assembly language and computer processor simulators. (5 contact hours: 1 lecture, 4 lab)

ITCS 2900 Special Topics in Information Technology/Computer Science **1-4 Credits**

These specialized courses provide in-depth examinations of Information Technology Computer Science/ Programming topics not covered in detail elsewhere in the curriculum.

Information Technology - Database (ITDB)

ITDB 1400 Introduction to SQL **2 Credits**

Prerequisite: ITIS 1005 or permission of instructor

This course provides an introduction to SQL (Structured Query Language) to create and maintain database objects, manipulate data, and to produce readable output displays and reports. Students will use the Oracle relational database management system along with DDL (Data Definition Language), DML (Data Manipulation Language), and SQL*Plus format commands. This course and ITDB 1405 Introduction to Oracle SQL/PL help students prepare for the Introduction to Oracle: SQL and PL/SQL certification exam. Although it is not a prerequisite for this course, students may benefit from taking a programming course prior to taking this course. (3 contact hours: 1 lecture, 2 lab)

ITDB 1405 Oracle PL/SQL Programming **2 Credits**

Prerequisite: ITCS 1010, ITDB 1400; or permission of instructor

This course continues the study of the Oracle relational database management system by providing an introduction to the Oracle PL (Procedural Language). Students will write PL with embedded SQL (Structured Query Language) to interact with an Oracle Server, create control structures, write explicit cursors, and handle exceptions. Additional concepts include procedures, functions, packages, and triggers. This course helps students prepare for Oracle certification. (3.25 contact hours: 0.75 lecture, 2.5 lab)

ITDB 1406 Microsoft SQL Concepts **2 Credits**

Prerequisite: ITIS 1005 or permission of instructor

This course provides students with knowledge about SQL (Structured Query Language) along with an introduction to programming objects using Microsoft SQL. Students will use Microsoft SQL Server to write queries, create and modify data, and create database objects such as views, stored procedures and functions, and triggers. This course helps students prepare for Microsoft SQL Server certification. Although it is not a prerequisite for this course, students may benefit from taking ITDB 1400 Introduction to SQL prior to taking this course. (3 contact hours: 1 lecture, 2 lab)

ITDB 1430 Microsoft Access Relational Database **3 Credits**

Prerequisite: ITIS 1000 or ITIS 1005 or permission of instructor

This course provides a comprehensive study of database management in a Microsoft Windows environment. Students will develop database structures, create and maintain tables, run and save queries, sort and filter records, and create and customize forms and reports. Advanced topics include creating and running macros, creating switchboards, and writing Visual Basic code. This course is cross-listed as ITIS 1530 Microsoft Office Access: Skills and Techniques and ITDB 1430 Microsoft Access Relational Database. Students who have taken the course under the alternative course ID should not take this course. (4.5 contact hours: 1.5 lecture, 3 lab)

ITDB 2417 Oracle Database Administration **3 Credits**

Prerequisite: ITDB 1405 or permission of instructor

This course introduces students to various database administrative skills, including installing, starting up and shutting down, and maintaining an Oracle database, as well as advanced skills, including networking, backup and recovery, automating database management, managing resources, and transferring data. The course helps students prepare for the Oracle Database Administration certification exams. (4 contact hours: 2 lecture, 2 lab)

ITDB 2427 Microsoft SQL Server Administration **3 Credits**

Prerequisite: ITDB 1406 or permission of instructor

This course instructs students in programming and implementing a Microsoft SQL Server database. Students will gain technical skills in creating and managing database objects, such as views and stored procedures. Students will gain additional knowledge in the maintenance of SQL elements, including indexes, data types, and constraints. This course also provides an understanding of database optimization and analysis. This course provides students with various database administrative skills, such as installing, maintaining, backing up, and recovering a Microsoft SQL Server database. Students will also learn how to perform other administrative tasks, including configuring and troubleshooting. This course helps students prepare for the Microsoft certification exams. (4 contact hours: 2 lecture, 2 lab)

Information Technology - Information Systems (ITIS)

ITIS 0800 Computer Skill Development **1 Credit**

This course is designed for students who have little or no computer experience or who have not used a computer for a number of years. The course emphasizes the beginning use of computers and includes the fundamentals of computer operations, creating a simple document using a word processing software package, and basic Internet and e-mail usage. Credit in this course will not satisfy any degree or certificate requirements. The course grade will be Satisfactory or Unsatisfactory. (2.5 contact hours: 0.25 lecture, 2.25 lab)

ITIS 1000 Introduction to Personal Computers **1 Credit**

This course provides an overview of computer concepts and introductory training in the use of computer hardware and software. Students will study computer equipment, computer software, and related terminology. The course includes the fundamentals of using operating system and productivity software, Internet tools and services, and an introduction to an e-Learning environment using Blackboard. Either ITIS 1005 Computers and Information Processing or ITIS 1000 serves as a prerequisite for other IT&CS courses. Students who have taken ITIS 1005 should not take this course. (2 contact hours: 0.5 lecture, 1.5 lab)

ITIS 1005 Computers and Information Processing **(TAG, CTAG) 3 Credits**

This computer literacy course provides a fundamental knowledge of computers and their role in today's society. Students will study computer equipment, computer software, and related terminology. The course also provides introductory training in the use of computer hardware and software, including the fundamentals of using operating system and productivity software, Internet tools and services, as well as an introduction to an e-Learning environment using Blackboard. Either ITIS 1000 Introduction to Personal Computers or ITIS 1005 serves as a prerequisite for other IT&CS courses. This course meets the Transfer Assurance Guides (TAG: OBU003) and Career Technical Assurance Guides (CTAG: CTIT001) requirements for Ohio's Articulation and Transfer Policy. (4 contact hours: 2.5 lecture, 1.5 lab)

ITIS 1008 Ethics in Information Technology **1 Credit**

Prerequisite: ITIS 1005 or permission of instructor

This course provides an understanding of ethical and societal issues in today's Information Technology (IT) world. It includes an overview of ethics for IT professionals and topics on computer crime, software development, intellectual property, IT impact on quality of life, morality, and codes of ethics and conduct. (1.5 contact hours: 0.5 lecture, 1 lab)

ITIS 1025 Managing and Optimizing Personal Computers **2 Credits**

Prerequisite: ITIS 1005, ITON 1050 or ITON 1060; or permission of instructor

This course provides a fundamental knowledge of personal computer hardware and operating systems software. Students will use various software utilities to maintain, troubleshoot, and optimize the operations of PCs in a Windows environment. Topics include troubleshooting fundamentals and support techniques. (3 contact hours: 1 lecture, 2 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

ITIS 1030 Security Awareness **1 Credit**

This course provides a basic introduction to practical security knowledge of computers and related technology equipment. It covers all aspects of information security and explains the value of securing data, both for home users and the workplace. The course introduces ethical policies at government, organizational, and individual levels, the importance of data confidentiality and integrity, risk management, common threats and countermeasures, wired and wireless networks, Internet risks, and personal security defenses. Hands-on exercises will demonstrate several course concepts in a Windows environment. (2 contact hours: 0.5 lecture, 1.5 lab)

ITIS 1100 Internet: Services, Tools and Web Page Creation **2 Credits**

Prerequisite: ITIS1000 (can be taken concurrently) or ITIS1005 (can be taken concurrently) or permission of instructor

This course provides an overview of the Internet including services, tools, and web page creation. Topics also include a brief history of the Internet, browser basics, refined searching techniques, Internet security, electronic commerce, and societal issues. Students will use a browser program with special emphasis on the functions of email, mailing lists (listservs), newsgroups, chatting, search engine usage, wikis, blogs, and file transfer protocol. They will also learn and use basic HTML code to design and create web pages. (3 contact hours: 1 lecture, 2 lab)

ITIS 1108 Using an HTML Editor **2 Credits**

Prerequisite: ITCS 1105 or GRDS 1375 or permission of instructor

This course provides continued instruction in the use of HTML. Students will build on skills and knowledge from ITCS 1105 Web Programming I and incorporate the use of an HTML editor program. Students will use the Adobe Dreamweaver Web authoring tool to develop Web pages and use templates and wizards/coaches to simplify Web page development. The course will examine other authoring tools as the industry evolves. (3 contact hours: 1 lecture, 2 lab)

ITIS 1115 Internet Technologies and Concepts **2 Credits**

Prerequisite: ITIS 1005 or permission of instructor

This course provides a vendor-neutral focus on the technology behind the Internet with a comprehensive overview of Internet concepts. Students will examine Internet fundamentals; Internet clients; Web development tools and concepts; networking hardware, software, protocols, and topologies; security concepts and features; and e-business concepts and models. (3 contact hours: 1 lecture, 2 lab)

ITIS 1130 Introduction to Web Design **1 Credit**

Prerequisite: ITIS 1005, BUSM 1700 (can be taken concurrently) or ITIS 1100; or GRDS 1375; or permission of instructor

This course introduces techniques for effective Web page design. The course helps students design Web sites by focusing on information presentation and audience considerations as well as features and tools available to enhance sites. (1.5 contact hours: 0.5 lecture, 1 lab)

ITIS 1355 Security+ and Security Essentials **3 Credits**

Prerequisite: ITIS 1005 or ITIS 1030 or ITON 1011 or permission of instructor

This course introduces the basics of network security including computer network vulnerabilities and threats and how to circumvent them by providing safeguards and countermeasures. Students will explore network security planning, network security technology, network security organization, and the legal and ethical issues associated with network security. This course helps students prepare for CompTIA's Security+ certification. (5 contact hours: 2 lecture, 3 lab)

ITIS 1360 Introduction to Computer Forensics and Investigations **3 Credits**

Prerequisite: CRMJ 1110, ITIS 1005, ITIS 1030, ITON 1011

This course provides students with the basic knowledge and skills necessary to perform computer forensics and investigate criminal cyber activities. Students will gain an introduction to tools and techniques of computer forensics. They will also learn about file structures, data recovery, e-mail and network investigations, and expert witness testimony. (5 contact hours: 1 lecture, 4 lab)

ITIS 1510 Microsoft Office Word: Skills and Techniques **3 Credits**

Prerequisite: ITIS 1000 or ITIS 1005 or permission of instructor

This course provides a comprehensive study of word processing software. Students will create and edit documents, enhance text using various formatting options, and use proofing tools. In addition, the course will explore ways to enhance page layout and design using themes, styles, and templates. Advanced topics include creating tables, performing a mail merge, creating and running macros, and creating online documents and forms. (4.5 contact hours: 1.5 lecture, 3 lab)

ITIS 1520 Microsoft Office Excel: Skills and Techniques **3 Credits**

Prerequisite: ITIS 1000 or ITIS 1005 or permission of instructor

This course provides a comprehensive study of electronic spreadsheets. Students will design, create, edit, and format spreadsheets, charts, and tables. In addition, the course will explore ways to utilize spreadsheet functions in data analysis. Advanced topics include handling multiple worksheets as well as creating and using templates, macros, defined names, databases, data protection and validation, and pivot tables. (4.5 contact hours: 1.5 lecture, 3 lab)

ITIS 1530 Microsoft Office Access: Skills and Techniques **3 Credits**

Prerequisite: ITIS 1000 or ITIS 1005 or permission of instructor

This course provides a comprehensive study of database management in a Microsoft Windows environment. Students will develop database structures, create and maintain tables, run and save queries, sort and filter records, and create and customize forms and reports. Advanced topics include creating and running macros, creating switchboards, and writing Visual Basic code. This course is cross-listed as ITIS 1530 Microsoft Office Access: Skills and Techniques and ITDB 1430 Microsoft Access Relational Database. Students who have taken the course under the alternative course ID should not take this course. (4.5 contact hours: 1.5 lecture, 3 lab)

ITIS 1540 Microsoft Office PowerPoint: Skills and Techniques **2 Credits**

Prerequisite: ITIS 1000 or ITIS 1005 or permission of instructor

This course provides a comprehensive study of presentation graphics in a Microsoft Windows environment. Students will create, edit, and display slide shows while using design templates, special effects, and various presentation views. Additional topics include embedding and modifying text, spreadsheets, graphs, organizational charts, clip art, and graphic objects. (3 contact hours: 1 lecture, 2 lab)

ITIS 1550 Using Microsoft Office: Word and Excel **3 Credits**

Prerequisite: ITIS 1000 or ITIS 1005 or permission of instructor

This course provides a study of how to use word processing and electronic spreadsheet software. Students will design, create, edit, and format documents, spreadsheets, charts, and tables. In addition, the course will explore ways to enhance page layout and design using styles and templates, as well as utilize spreadsheet formulas and functions in data analysis. Additional topics include performing a mail merge and importing data into a spreadsheet. (4.5 contact hours: 1.5 lecture, 3 lab)

ITIS 2015 Information Technology Project Management **3 Credits**

Prerequisite: BUSM 1300, ITCS 1010; or permission of instructor

This course develops project management skills needed to define, plan, lead, monitor, and complete Information Technology projects. Students will study the role of the project manager and examine and apply tools used for project management. This course helps students prepare for Project Management Institute's (PMI) Project Management Professional (PMP) certification and CompTIA's Project+ certification. (4 contact hours: 2.5 lecture, 1.5 lab)

ITIS 2350 Management of Information Security **3 Credits**

Prerequisite: ITIS 1355 or permission of instructor

This course provides students an overview of information security from a management perspective, as well as a thorough understanding of the administration of information security. Topics include planning for security and contingencies, security policies, development of security programs, investigation of security management models and practices, risk management, personnel security, laws, and ethics. This course helps students prepare for industry certification exams. (5 contact hours: 2 lecture, 3 lab)

ITIS 2355 Security Investigation and Penetration Studies **3 Credits**

Prerequisite: CNET 2720 or ITIS 1355 or Security+ Certification or permission of instructor

This course introduces the network security specialist to the various methodologies for attacking a network. Students will explore the concepts, principles and techniques, supplemented by hands-on exercises, for attacking and disabling a network. The course presents these methodologies within the context of properly securing the network. It emphasizes network attack methodologies with the use of network attack techniques and tools, and helps students prepare for the Systems Security Certified Practitioner (SSCP) certification. (5 contact hours: 2 lecture, 3 lab)

ITIS 2360 Computer Forensics Services, Tools, and Investigation **3 Credits**

Prerequisite: ITIS 1360 or permission of instructor

This course provides students with practical experience in the use of additional computer forensic tools, including those used for disaster recovery, and encryption or decryption of evidence data. Students will receive instruction in other investigative and analytical strategies used in a computer forensics laboratory. Students will work with various scenarios to gain experience in investigation of systems and networks and in appropriate presentation of findings. (5 contact hours: 1 lecture, 4 lab)

ITIS 2510 Help Desk Concepts and Management **3 Credits**

Prerequisite: ITIS 1005 or permission of instructor

This course develops computer support and customer service skills needed by help desk specialists. Students will study the role of a help desk specialist and examine and apply tools used for help desk management. (3 contact hours)

ITIS 2890 Information Technology and Computer Science Capstone **2 Credits**

Prerequisite: 45 semester credits including 15 credits of ITCS/ITDB/ITIS/ITON courses, a grade of "C" or better in all ITCS/ITDB/ITIS/ITON courses

This course serves as a capstone experience for Information Technology and Computer Science degree programs by providing students with an opportunity to finalize their electronic portfolio, practice and refine soft skills required in industry, enhance knowledge of ethical considerations in IT, and prepare for employment with skills related to resume writing, job search, and job interviewing. Students will also gain knowledge in their chosen profession through a field observation experience. Students must complete 8 hours of field observation in an IT department. (2 contact hours)

Information Technology - Operating Systems/Networking (ITON)

ITON 1011 Comparative Analysis of Microcomputer Operating Systems **2 Credits**

Prerequisite: ITIS 1005 or ENGR 1000 or permission of instructor

This course provides a historical perspective and an overview of operating systems significant to the development of microcomputer. Students will study vocabulary, usage, and basic functionality of a wide variety of previous and current versions. (2.5 contact hours: 1.5 lecture, 1 lab)

ITON 1040 Using Virtualization **1 Credit**

Prerequisite: ITIS 1005 or ITON 1011 or permission of instructor

This course introduces the basics of operating systems virtualization. Students will explore operating systems virtualization, virtualization technology, tools and techniques, and best practices involved with virtualization. (1.5 contact hours: 0.5 lecture, 1 lab)

ITON 1050 Using Microsoft Windows 7 **1 Credit**

Prerequisite: ITIS 1000 or ITIS 1005 or ENGR 1000 or permission of instructor

This course provides students with an overview of using the Microsoft Windows 7 operating system to manage and interact with the microcomputer. Topics include file management techniques, customizing the Windows environment, managing hardware devices, backup and restore strategies, using Windows 7 administrative and management tools, and working with multimedia files. (1.5 contact hours: 0.5 lecture, 1 lab)

ITON 1060 Using Microsoft Windows 8 **1 Credit**

Prerequisite: ITIS 1000 or ITIS 1005 or ENGR 1000 or permission of instructor

This course provides students with an overview of using the Microsoft Windows 8 operating system to manage and interact with the microcomputer and mobile devices. Topics include file management techniques, customizing the Windows environment, managing hardware devices, backup and restore strategies, using Windows 8 administrative and management tools, protecting your computer, and working with multimedia files. (1.5 contact hours: 0.5 lecture, 1 lab)

ITON 1205 Network+ and Networking Essentials **2 Credits**

Prerequisite: ITIS 1005 or ENGR 1000 or permission of instructor

This course provides an introduction to local area networking concepts including current networking technology for LANs and WANs (Local and Wide Area Networks), and the Internet. It also helps students prepare for CompTIA's Network+ certification. (2.5 contact hours: 1.5 lecture, 1 lab)

ITON 1610 Wireless Communications and Networking **2 Credits**

Prerequisite: ITIS 1115 (can be taken concurrently) or ITON 1205 (can be taken concurrently) or CNET 1100 (can be taken concurrently); or permission of instructor

This course provides an overview of wireless communications and wireless networking concepts. Students will study the protocols and functionality of wireless networks and equipment compliant devices. Students will use third-party products in a Windows environment to analyze voice, video, and text processing for business information systems, home networks, and the Internet. (3 contact hours: 1 lecture, 2 lab)

ITON 1620 Voice Communications and Networking **2 Credits**

Prerequisite: ITIS 1115 (can be taken concurrently) or ITON 1205 (can be taken concurrently) or CNET 1100 (can be taken concurrently); or permission of instructor

This course provides an overview of VoIP communications and voice networking concepts. Students will study voice and data as they converge into a VoIP and IP telephony architecture. Other topics include packet voice technologies, the operation of voice protocols, standards that define voice networks, and the mainstream voice implementations. Students will use third party products in a Windows environment to troubleshoot and measure connection performance, as appropriate. (3 contact hours: 1 lecture, 2 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

ITON 1725 Introduction to the Linux/Unix Operating System **2 Credits**

Prerequisite: ITIS 1005 or ITON 1011 or permission of instructor

This course introduces students to the Linux/Unix Operating System. Students will become familiar with basic Linux commands entered through the BASH shell for file system management, editing, printing, and process control. Students will also learn how to use Linux KDE and GNOME graphical user interfaces (GUIs). This course helps students prepare for the Linux+ certification exam. (3.25 contact hours: 0.75 lecture, 2.5 lab)

ITON 1730 Implementing and Administering Linux **2 Credits**

Prerequisite: ITON 1725 or permission of instructor

This course provides students with the skill needed to administer the Linux Operating System in both a client and a server environment. Students will install Linux and utility/application software; configure firewall, mail, and Web services; create users and groups; and troubleshoot the operating system. This course is a continuation of ITON 1725 Introduction to the Linux/Unix Operating System and also helps students prepare for Linux+ certification. (3.25 contact hours: 0.75 lecture, 2.5 lab)

ITON 1747 Red Hat Academy System Administration I **3 Credits**

Prerequisite: ITIS 1005 or ENGR 1000, CNET 1100 or ITIS 1115 or ITON 1205; or permission of instructor

This course provides students with basic knowledge of Red Hat Linux enterprise systems and skills in the use of basic commands, file systems, users and groups, bash shell, process management, text editors, network applications, searching and organizing data, and graphical applications. This course helps students prepare for Red Hat Certified System Administrator (RHCSA) certification. (5 contact hours: 2 lecture, 3 lab)

ITON 1757 Red Hat Academy System Administration II **3 Credits**

Prerequisite: ITON 1747 or permission of instructor

This course provides students with the additional skills necessary to administer Red Hat Enterprise Linux systems. Topics include process management, advanced user and file access configuration, working with logical volumes and network storage, SELinux security, firewalls, additional command-line tools, and troubleshooting. This course helps students prepare for the Red Hat Certified System Administrator (RHCSA) certification. (5 contact hours: 2 lecture, 3 lab)

ITON 2050 Windows 7 Configuration **2 Credits**

Prerequisite: ITON 1050 or ITON 1011, ITON 1205 or CNET 1100; or permission of instructor

This course provides a technical level of understanding and experience in the areas of configuring, implementing, supporting, and maintaining Microsoft's Windows 7. Topics include installation, upgrading, configuring, networking, security, and application implementation. This course helps students prepare for one of the Microsoft Certified Technology Specialist exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2051 Windows 7 Enterprise Support Technician **2 Credits**

Prerequisite: ITON 2050 or permission of instructor

This course provides a technical level of understanding and experience in the areas of supporting and troubleshooting Microsoft's Windows 7 clients in an enterprise. Topics include deployment, managing security, and managing and maintaining systems that run Windows 7. This course helps students prepare for one of the Microsoft Certified Technology Specialist exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2060 Configuring Windows 8 **2 Credits**

Prerequisite: ITON 1050 or ITON 1060 or ITON 1011, ITON 1205 or CNET 1100; or permission of instructor

This course provides a technical level of understanding and experience in the areas of configuring, implementing, supporting, and maintaining Microsoft's Windows 8. Topics include installation, upgrading, configuring, networking, security, and application implementation. This course helps students prepare for one of the Microsoft Certified Professional exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2061 Managing and Maintaining Windows 8 **2 Credits**

Prerequisite: ITON 2060 or permission of instructor

This course provides a technical level of understanding and experience in the areas of configuring and Microsoft's Windows 8 computers, devices, users, and associated network and security resources. Topics include designing an installation and application strategy, maintaining resource access, maintaining clients and devices, and managing Windows 8 using cloud services and other Microsoft applications. This course helps students prepare for one of the Microsoft Certified Professional exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2232 Core Solutions of Microsoft Office SharePoint Server **2 Credits**

Prerequisite: ITON 2242 (can be taken concurrently) or permission of instructor

This course provides students with the specialized knowledge and skills necessary to install, configure, implement, and troubleshoot a Microsoft SharePoint Server and its clients. This course helps students prepare for one of the Microsoft Professional exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2240 Installing and Configuring Windows Server 2012 **2 Credits**

Prerequisite: ITON 1060 or ITON 1011, ITON 1205 or CNET 1100; or permission of instructor

This course provides a technical level of understanding and experience in the areas of installing and configuring Microsoft's Windows Server 2012. Topics include installation, configuring, virtualization, networking, security, and administration. This course helps students prepare for one of the Microsoft Certified Professional exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2241 Administering Windows Server 2012 **2 Credits**

Prerequisite: ITON 2240 or permission of instructor

This course provides a technical level of understanding and experience in the administration tasks necessary to maintain a Windows Server 2012 infrastructure, such as user and group management, network access, and data security. This course helps students prepare for one of the Microsoft Certified Solution Associate (MCSA) exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2242 Configuring Advanced Windows Server 2012 **2 Credits**

Prerequisite: ITON 2241 or permission of instructor

This course provides a technical level of understanding and experience in the advanced administration tasks necessary to deploy, manage, and maintain a Windows Server 2012 infrastructure, such as fault tolerance, certificate services, and identity federation. This course helps students prepare for one of the Microsoft Certified Solution Associate (MCSA) exams. (4 contact hours: 1 lecture, 3 lab)

ITON 2750 Shell Script Programming **2 Credits**

Prerequisite: ITCS 1010, ITON 1746, ITON 2030 or ITON 2050; or permission of instructor

This course provides in-depth coverage of the use of operating system commands to create shell script programs that customize the environment. It includes shell commands, shell grammar, shell script programming concepts, decision structures, looping, functions, arrays, sorting, searching, and dialog boxes for user-friendly scripting. Students will also learn to create manual pages to document scripts. (3.25 contact hours: 0.75 lecture, 2.5 lab)

ITON 2760 Linux/Unix Security **2 Credits**

Prerequisite: ITON 1730 or permission of instructor

This course introduces students to information security in the Linux/Unix environment. Students will become familiar with industry-standard techniques for information risk analysis and methods of defending the infrastructure and its data. Students will learn about firewalls/filters, hardware and software hardening, automated tools for security monitoring, automated logfile scanning, management issues, and various other security-related topics. (3.25 contact hours: 0.75 lecture, 2.5 lab)

ITON 2767 Red Hat System Administration III **3 Credits**

Prerequisite: ITON 1747, ITON 1757 or CNET 2720; or permission of instructor

This course is focused on deployment and management of network servers running caching DNS service, MariaDB, Apache HTTPD, network file sharing with NFS and SMB, iSCSI initiators and targets, advanced networking and firewalled configurations, and the use of Bash shell scripting to help automate, configure, and troubleshoot the system. It is intended to help students broaden their ability to administer Linux systems at an enterprise level. This course helps students prepare for the Red Hat Certified Engineer (RHCE) Exam. (5 contact hours: 2 lecture, 3 lab)

INTERDISCIPLINARY STUDIES

IDST 1200 Introduction to Women's Studies **(TM) 3 Credits**

This interdisciplinary course examines contemporary women's experiences from both an international and historical perspective. The course introduces students to major concepts, issues, and methods in the field of Women's Studies by drawing on current research in the humanities, social sciences, and sciences. (3 contact hours)

IDST 2400 Culture and Civilization of the Spanish Speaking World **(TM) 3 Credits**

This interdisciplinary course examines political, demographic, cultural, ethnical, economic, and social aspects of the Spanish speaking world. The course introduces students to the study of the cultural variety of the Spanish speaking world through the reading and analysis of a variety of texts, journalism, literature, art, folklore, film, documentaries, and demographics. The course places special focus on the contributions that different Hispanic communities have made to the United States, as well as their current role and situation in our society. This course is taught in English. Because of similarities in course content, students who have taken SPAN 2002 Intermediate Spanish II: Culture and Civilization should not take this course. (3 contact hours)

IDST 2500 Leadership Development **3 Credits**

The central focus of this specialized course is the development of leaders and leadership skills. It provides a basic understanding of leadership, theories of group dynamics, and the moral and ethical responsibilities of leadership. It also assists students in developing their own style of leadership. This course is cross-listed as IDST 2500 Leadership Development and BUSM 2250 Leadership Development. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

ITALIAN

ITAL 1001 Elementary Italian I **4 Credits**

This introductory course is a study of functional Italian, with emphasis on speaking and writing the language. It covers basic sentence structure, grammatical points, and the indicative tenses. The course includes intensive work on pronunciation problems and stresses the use of the language through simple conversations, readings, and written exercises. (4 contact hours)

ITAL 1002 Elementary Italian II **4 Credits**

Prerequisite: ITAL 1001 or permission of instructor

This course is a continuation of ITAL 1001 Elementary Italian I. Students will continue to learn the basic rules of Italian grammar and syntax and to acquire the basic vocabulary needed for oral and written expression at the elementary level. The course introduces cultural materials along with the language materials. (4 contact hours)

ITAL 2001 Intermediate Italian I: Conversation and Grammar **3 Credits**

Prerequisite: ITAL 1002 or permission of instructor

The course completes the overview of Italian grammar and emphasizes the use of the language through conversational activities based on readings and role-playing activities. (3 contact hours)

ITAL 2002 Intermediate Italian II: Culture and Civilization **3 Credits**

Prerequisite: ITAL 2001 or permission of instructor

This course introduces students to the culture and civilization of the Italian-speaking world through readings from various sources, films and documentaries, class discussions, reports, and oral presentations. This course is taught in Italian. (3 contact hours)

JOURNALISM

JRNL 1000 Introduction to Mass Media **(TAG) 3 Credits**

This course provides an overview of modern mass media systems and industries and the historical context for their development. It also explores contemporary interrelationships among the media, discusses future media systems, and reviews major trends in media research to provide an analytical framework for media consumption, and provides students the opportunity to gain hands-on newswriting experience. (3 contact hours)

JRNL 1100 News Writing and Reporting I **3 Credits**

This course introduces students to the basic principles of media writing for print, broadcast, and public relations. The course emphasizes news style and routine news coverage including interviewing techniques and news judgement. (3 contact hours)

JRNL 1200 Publication Writing, Editing and Design **4 Credits**

This course offers an introduction to an editor's responsibilities, with an emphasis on copyediting skills, headline writing, art selection and sizing, and editing for accuracy, taste, libel, readability, news judgment, and news values. It introduces students to the fundamentals of publication design through publication assignments. (6 contact hours: 2 lecture, 4 lab)

JRNL 1300 News Writing and Reporting II **3 Credits**

Prerequisite: JRNL 1100

As the continuation of JRNL 1100 News Writing and Reporting I, this course emphasizes more complex forms of news reporting and news gathering through coverage of community news and events. It provides students with news reporting experience via the use of public records, coverage of community events, and computer-assisted news gathering techniques. (3 contact hours)

JRNL 1500 Newspaper Staff Practice **1 Credit**

Prerequisite: JRNL 1100

This course is designed for students interested in obtaining practical journalism experience in the writing, editing, and production of the college newspaper. Students may take this course up to six times for credit. (3 contact hours: 3 lab)

LINGUISTICS

LING 1500 Introduction to Linguistics **3 Credits**

This course is an introduction to the study of the nature and use of language. It includes an analysis of the differences and similarities between natural (animal and human) and artificial languages as well as an overview of the geographical distribution of language groups. It also introduces students to the analysis of the sound of language, word formation, sentence structure and meaning, and language use. The course emphasizes the process of language acquisition, and the relationship between linguistics and disciplines such as sociology, psychology, neuroscience, and cognitive science. (3 contact hours)

MATHEMATICS

Business and Engineering Mathematics courses are listed at the end of this section.

MATH 0745 Essential Skills for Algebra **2 Credits**

Prerequisite: placement test

This course reviews and develops essential arithmetic skills regarding real numbers. Topics from arithmetic include whole numbers, fractions, decimals, ratios, proportions, percents, rational numbers, and applications. Students will prepare a mathematics notebook of class notes and homework, review research in mathematics education, discuss theories of mathematics anxiety and how to overcome those anxieties, explore strategies for reading mathematics textbooks effectively, practice communications skills orally and in writing, and outline strategies for successfully taking tests. Students must supply a scientific calculator. Credits in this course will not satisfy any degree or certificate requirements. (2 contact hours)

MATH 0850 Beginning Algebra **3 Credits**

Prerequisite: A grade of "SC" or better in MATH 0745 or placement test

This course is designed for students who have never taken algebra. Topics include simplification of algebraic expressions, order of operations, solutions and graphs of linear equations, systems of two linear equations in two unknowns, simple linear inequalities, compound linear inequalities, absolute value equations and inequalities, polynomial arithmetic, integer exponents, and scientific notation. Techniques include numerical, analytical, and graphical methods. Credits in this course will not satisfy any degree or certificate requirements. (3 contact hours)

MATH 0950 Intermediate Algebra **3 Credits**

Prerequisite: A grade of "SC" or better in MATH 0850 or placement test

This course continues the development of basic algebra concepts. Topics include factoring polynomials, solving polynomial equations, rational expressions, rational equations, radical expressions, radical equations, solving quadratic equations, graphing quadratic equations, and an introduction to the complex number system. (3 contact hours)

MATH 1330 Statistics for the Health Sciences **(TM) 3 Credits**

Prerequisite: A grade of "SC" or better in MATH 0950 or placement test

This course introduces the fundamental topics in statistics as they relate to the health science field. Topics include experimental design, graphical and numerical descriptive statistics, fundamentals of probability, the binomial and normal distributions, sensitivity analysis, hypothesis testing, analysis of variance, regression analysis, chi-square analysis, and nonparametric tests. (3 contact hours)

MATH 1550 Statistics **(TM) 4 Credits**

Prerequisite: A grade of "SC" or better in MATH 0950 or placement test

This course covers introductory topics in statistics, including statistical methods used to gather, analyze, and present data; fundamentals of probability and probability distributions; inferential statistics through estimation and hypothesis testing; correlation and regression; tests for independence; and analysis of variance. (4 contact hours)

MATH 1600 Survey of College Mathematics **(TM) 3 Credit**

Prerequisite: A grade of "SC" or better in MATH 0950 or placement test

This course explores systems of linear equations, Gauss-Jordan elimination, matrices, matrix algebra, linear programming, simplex method, mathematics of finance, probability, statistics, random variables, and the binomial and normal distributions. Students must supply a graphing calculator. (3 contact hours)

MATH 1650 College Algebra **(TM) 4 Credits**

Prerequisite: A grade of "SC" or better in MATH 0950 or placement test

This course investigates relations and functions numerically, analytically, and graphically. Topics include solutions of polynomial and rational equations and inequalities; exponential and logarithmic equations; systems of linear and non-linear equations; conic sections; sequences and series; and mathematical modeling. Students will need to supply a graphing utility; the instructor will provide details. (4 contact hours)

MATH 1700 Trigonometry **(TM) 3 Credits**

Prerequisite: MATH 1650 or placement test

This course includes the study of trigonometric functions and inverse trigonometric functions and their graphs; solutions of right and oblique triangles and their applications; solutions of trigonometric equations; the use of identities, vectors, and complex numbers; and graphs of polar and parametric equations. Students will need to supply a graphing utility; the instructor will provide details. (3 contact hours)

MATH 1890 Finite Mathematics **(TM) 4 Credits**

Prerequisite: MATH 1650 or permission of instructor

This course explores finite mathematics as applied to business, social sciences, and life sciences. Topics include linear systems of equations, Gauss-Jordan, matrices, matrix algebra, Leontief Input-Output analysis, linear programming, simplex method, mathematics of finance, probability, statistics, random variables, binomial and normal distributions, Markov chains, and game theory. Student must supply a graphing calculator. (4 contact hours)

MATH 2400 Calculus for Business, Social, and Life Sciences **(TM) 5 Credits**

Prerequisite: MATH 1650 or permission of instructor

This course explores differential and integral calculus as applied to business, social sciences, and life sciences. Topics include functions, limits, and derivatives of algebraic, exponential, and logarithmic functions; applications of derivatives to maximum and minimum values of a function; cost, revenue, profit, supply, and demand; growth rates; decay rates, definite and indefinite integrals, improper integrals, differential equations, multivariable calculus, applications of the integral, consumers' and producers' surplus, integration of rate functions, growth models, and Cobb-Douglas production functions. Students must supply a graphing calculator. (5 contact hours)

MATH 2500 Calculus and Analytical Geometry I **(TM) 5 Credits**

Prerequisite: MATH 1700 or placement test

This is the first course in a three-semester sequence study of differential and integral calculus for students majoring in mathematics, science, or engineering. Topics include limits and continuity, the derivative, differentiation, the differential, applications of differentiation, the indefinite integral, the definite integral, and the calculus of the transcendental functions. Students will need to supply a graphing utility; the instructor will provide details. (5 contact hours)

MATH 2600 Calculus and Analytical Geometry II **(TM) 5 Credits**

Prerequisite: MATH 2500 or permission of instructor

This is the second course in a three-semester sequence study of differential and integral calculus. Topics include applications of integration, techniques of integration, L'Hopital's rule, improper integrals, sequences, infinite series, power series, Taylor's series, conic sections, parametric equations, polar coordinates, vectors, and applications. Students will need to supply a graphing utility; the instructor will provide details. (5 contact hours)

MATH 2700 Calculus and Analytical Geometry III **(TM, TAG) 4 Credits**

Prerequisite: MATH 2500, MATH 2600; or permission of instructor

This is the third course in a three-semester sequence study of differential and integral calculus. Topics include differential calculus of functions of more than one variable, directional derivative, gradients, applications of partial derivatives, multiple integration, and line integrals. Students will need to supply a graphing utility; the instructor will provide details. (4 contact hours)

MATH 2800 Linear Algebra **(TM, TAG) 4 Credits**

Prerequisite: MATH 2500, MATH 2600; or permission of instructor

This course includes a study of systems of linear equations, matrix algebra, determinants, vector spaces, linear transformations, eigenvalues, eigenvectors, diagonalization, and applications. Students will need to supply a graphing utility; the instructor will provide details. (4 contact hours)

MATH 2850 Differential Equations **(TM, TAG) 4 Credits**

Prerequisite: MATH 2700 or permission of instructor

This course includes a study of techniques for solving first order differential equations, techniques for solving linear differential equations, elementary applications, power series solutions, the Runge-Kutta method, the Laplace transform, and applications of differential equations to physical problems. Students will need to supply a graphing utility; the instructor will provide details. (4 contact hours)

MATH 2900 Special Topics in Mathematics **1-3 Credits**

These specialized courses provide in-depth examinations of mathematics topics not covered in detail elsewhere in the curriculum.

BUSINESS MATHEMATICS

MATH 1040 Applied Business Mathematics **2 Credits**

This course introduces mathematical computations as they are used for specific business applications. The course emphasizes word problems, as well as skill problems, using basic algebraic equations and the percentage formula. The course also covers applications for merchandising and payroll. (2 contact hours)

MATH 1050 Mathematics of Finance **2 Credits**

This course emphasizes the application of mathematics and basic algebra skills to various accounting and finance concerns/problems. Students will apply concepts of simple interest, compound interest, discounting, annuities, present value, annual percentage rate (APR), and financial ratios. (2 contact hours)

MATH 2130 Business Statistics I **(TAG) 3 Credits**

Prerequisite: MATH 1040 or MATH 1050 or MATH 1600 or higher

This course introduces students to the collection, analysis, and graphic presentation of data and the application of statistical methods to the solution of practical business problems. The course covers descriptive statistics, mathematics of probability, and statistical inference. This course is a requirement in the accounting program and several information technology and computer science programs. This course forms part of a two-course sequence to meet the Ohio Transfer Assurance Guide (TAG) requirements for business statistics. Students must take both this course and MATH 2135 Business Statistics II for transfer purposes. Students who are considering transferring this course sequence should take MATH 1650 College Algebra in addition to or as a replacement for the mathematics courses required for their degree programs. (3 contact hours)

MATH 2135 Business Statistics II **(TAG) 3 Credits**

Prerequisite: MATH 2130 or permission of instructor

This course is a continuation of the introduction to business statistics. The course introduces students to hypothesis testing, analysis of variance, regression and correlation analysis, nonparametric methods, statistical process controls, and the application of these methods to the solution of practical business problems. This course forms part of a two-course sequence to meet the Ohio Transfer Assurance Guide (TAG) requirements for business statistics. Students must take both this course and MATH 2130 (Business Statistics I) for transfer purposes. (3 contact hours)

ENGINEERING MATHEMATICS

MATH 0890 Pre-Technical Mathematics **3 Credits**

Prerequisite: A grade of "SC" or better in MATH 0745 or placement test

This course is designed for persons with some background in mathematics. The course emphasize the use of a scientific calculator to cover basic manipulation of whole numbers, fractions, decimals, and percents; systems of measurement; fundamentals of algebra from basic equations through quadratic and simultaneous linear equations; fundamentals of geometry from basic terminology through formulas for perimeter, area, and volume. Right angle trigonometry is also covered and practical applications from a variety of technical areas. Students must supply a scientific or graphing calculator for this course. The course grade will be Satisfactory or Unsatisfactory. (5 contact hours: 2 lecture, 3 lab)

MATH 1001 Introduction to Technical Mathematics **4 Credits**

Prerequisite: MATH 0890 or placement test

This course is designed for engineering technology students who have successfully completed Math 0890 Pre-Technical Mathematics or who have not qualified for Math 1101 Technical Mathematics I because of their placement test score. The course will provide students with a stronger foundation in algebra and geometry, with emphasis on logical thinking and application to engineering problems. Topics include a review of operations and applications of the real number system and geometry; algebraic concepts and operations from basic equations through systems of equations and quadratic equations, functions and graphs; using manual methods, graphing calculators, and computer assisted methods; an introduction to vectors and trigonometric functions; and right triangle trigonometry. Students must supply a graphing calculator for this course and be familiar with the use of computers. The recommended calculator type is the TI-84 Plus or TI-89. (6 contact hours: 3 lecture, 3 lab)

MATH 1101 Technical Mathematics I **4 Credits**

Prerequisite: MATH 1001 or placement test

This course is designed to meet the needs of engineering technology students as they encounter problems that occur in the world of work. Topics include a review of algebraic concepts and operations from basic equations through systems of equations, quadratic equations, right triangle trigonometry and an introduction to vectors. Topics introduced are graphing trigonometric functions, exponents, radicals, exponential and logarithmic functions, complex numbers, higher degree equations, systems of equations and inequalities, matrix algebra, and ratio, proportion, and variation. Students must supply a graphing calculator for this course and be familiar with the use of computers. The recommended calculator type is the TI-84 Plus or TI-89. (6 contact hours: 3 lecture, 3 lab)

MATH 1201 Technical Mathematics II **4 Credits**

Prerequisite: MATH 1101

This course introduces students to plane analytic geometry and calculus, with an emphasis on applications to engineering technology. Topics include sequences and series; lines; conic sections; translation and rotation of axes; limits; derivatives and their applications; integration and its applications; and a basic introduction to statistics, probability and empirical methods. Students must supply a graphing calculator for this course and be familiar with the use of computers. The recommended calculator type is the TI-84 Plus or TI-89. (6 contact hours: 3 lecture, 3 lab)

MECHANICAL ENGINEERING TECHNOLOGY

MECT 1050 Contemporary Technology **2 Credits**

This general education course provides students with an overview of technology innovations and issues that affect society. It presents developments in genetic technology, artificial intelligence, communications, and the technologies of space, medicine, and manufacturing; and discusses technology transfer, global energy resources, and environmental issues. (2 contact hours)

MECT 1150 Technical Communications **3 Credits**

Prerequisite: ENGR 1000 or permission of instructor

Through a unique multi-disciplinary approach, this course, a continuation of ENGR 1000 Introduction to Engineering Technology, introduces students to the combined use of technical writing (with an emphasis on standard usage), current hardware and software technology, and oral communications in the production of text, computer-generated documents, and oral presentations. The laboratory experience includes electronic and traditional research, application of the basic principles of technical writing, preparation and importation of text and graphics, and development of specification sheets, brochures, proposals, manuals, reports, and oral presentations. It also includes demonstration of the latest developments in hardware, software, advanced graphics, video, audio, and computer discs (CDs) relating to technical communications. (5 contact hours: 2 lecture, 3 lab)

MECT 1600 Geometric Dimensioning and Tolerancing **2 Credits**

Prerequisite: CADT 1100 or permission of instructor

This is a specialized course in which students will study the presentation of complex geometry according to the American National Standards Institute (ANSI) as written by the American Society of Mechanical Engineers (ASME), document ASME Y14.5. Topics include surface characterization, fits, cumulative and non-cumulative dimensions, maximum material condition, coordinate tolerancing, use of datums, as well as tolerance of common geometric forms and positions. The course also introduces students to a coordinate measuring machine (CMM) as a means of applied measurement and part conformance. (3 contact hours: 1 lecture, 2 lab)

MECT 2110 Engineering Mechanics I **(TAG) 3 Credits**

Prerequisite: MATH 1101, PHYS 1100

This intermediate level course emphasizes the systematic application of equilibrium principles, commonly called statics, to parts and structures, including analysis of external forces as vectors, multi-force members, two dimensional trusses, three dimensional equilibrium, friction, and properties of cross sectional geometry. (3 contact hours)

MECT 2150 Power Transmission **2 Credits**

Prerequisite: MATH 1101, PHYS 1100

This course introduces students to mechanical, hydraulic, pneumatic, and electrical systems that transmit industrial power. The course will include concepts of work and power, common forms of energy, and types of motion. Students will study commonly used components and systems used for industrial power transmission. (2 contact hours)

MECT 2210 Engineering Mechanics II **3 Credits**

Prerequisite: MECT 2110

This specialized course applies the principles of Newtonian mechanics to the study of motion and resulting forces. Students will apply these principles in solving applied problems involving velocity, acceleration, force, momentum, and energy. (3 contact hours)

MECT 2230 Strength of Materials **(TAG) 3 Credits**

Prerequisite: MATH 1201, MECT 2110

This course introduces students to the study of internal forces, with associated material limits, of structures and machine parts necessary to maintain equilibrium. Students will study effects of direct and shear loads in relation to material strength and deformation for simple structures, beams, and pressure vessels. (5 contact hours: 2 lecture, 3 lab)

MECT 2250 Mechanism Design **3 Credits**

Prerequisite: CADT 1100

This is an advanced course in which students will study analytical methods and synthesis of mechanisms through the use of application software. Students will learn to analyze position, velocity, acceleration, and force in order to design simple and complex linkages. (5 contact hours: 1 lecture, 4 lab)

MECT 2370 Materials Technology **(TAG) 3 Credits**

Prerequisite: MATH 1101

This course provides an introduction to metals, plastics, and ceramics commonly used in engineering technology. The course includes materials processing and fabrication, crystal and amorphous structures, relation of processing and heat treatment to internal structure, alloys and solid solutions, use of phase diagrams, prominent properties, and test methods. (4 contact hours: 2 lecture, 2 lab)

MECT 2420 Heat Transfer **2 Credits**

Prerequisite: PHYS 1200

This course explores the basic modes of conduction, convection, and radiation, applying cursory analysis to correct problems of heat dissipation and buildup in machines and processes. The course includes applications such as design of heat exchangers, cooling of electronic apparatus, solar energy, and thermal system design. (3 contact hours: 1 lecture, 2 lab)

MECT 2500 Electromechanics **2 Credits**

Prerequisite: MATH 1101, PHYS 1100, CIMN 1210

This course presents the interrelationship of electrical and mechanical machine elements and their underlying principles of operation. (4 contact hours: 1 lecture, 3 lab)

MECT 2600 Design of Machine Elements **2 Credits**

Prerequisite: CADT 2100, MECT 2230

This advanced course provides students the experience of applying the disciplines of dynamics and strength of materials to the design of machine elements. Students will study various types of bearings, gears, power shafts, couplings, springs, and fasteners. (4 contact hours: 1 lecture, 3 lab)

MEDIA TECHNOLOGY

MDIA 1003 Introduction to the Multimedia Computer **1 Credit**

Media communication has grown into a diversified commodity that is mostly driven by computer applications. This is a basic training course for those who have little experience with computers or the media platform. Through lecture and demonstration, students will develop an aptitude for audio and video-based computers used in today's interactive and broadcast media industry. (1 contact hour)

MDIA 1010 The Business and History of Broadcast and Interactive Media **2 Credits**

This survey course traces the history and development of the business of presenting film, video, and audio from their first iteration to the present. Accompanying the history and evolution of the technology is a study of the business practices and legal ramifications of activities in the broadcast industry, including licensing, performance rights, and copyrighting. Through lecture and demonstration, the course develops these ideas and makes them pertinent to the media business of today. (2 contact hours)

MDIA 1045 Writing for Broadcast and Interactive Media **2 Credits**

This course is an introduction to designing and writing for various media formats. Topics include techniques for research, writing, scripting, flowcharting, and storyboarding. The course analyzes narration, commentary, news reporting, and descriptive techniques for impact in many media scenarios. It considers interactive media conventions, production issues, development models, and prototyping as they influence writing. (2 contact hours)

MDIA 1060 Vocalization and Diction for Broadcast Media **2 Credits**

One of the most important uses of broadcast media is the dissemination of information critical to the public interest. Broadcasters' voices are a key to the ability for the public to understand the communication tool that is being made available, either by television, radio, or interactive presentation. This course develops methods and techniques pertinent in the art of vocal representation in these industries and explores, in depth, the art of reading for television/radio news and commercial narration. Through a partnership with Cable News Network (CNN), lecture, historical analysis, and practical application, this course provides the building blocks for effective media journalism. (3 contact hours: 1 lecture, 2 lab)

MDIA 1080 Staff Practice I **1 Credit**

Prerequisite: MDIA 1200 or MDIA 1300 or MDIA 1400 or MDIA 1500 or MDIA 1600 or MDIA 1700

A production requirement of all Media Technology programs, this course provides students with an open forum for the development of sound, video, radio, and interactive media programming skills. Through direct application of media industry crafts, students will learn the skill of media engineering as well as related business techniques required for success in the industry. Projects provide direct demonstrations of students' abilities as an engineer, a producer, a project leader, or a team member in both group and individual settings. (5.5 contact hours: 0.25 lecture, 5.25 lab)

MDIA 1200 Video I: Introduction to Video Production and Broadcast **(TAG) 3 Credits**

This course is an introduction to the operation and maintenance of professional and semi-professional video recording and editing equipment. Through lecture and a hands-on approach in various lab activities, the course presents the basic techniques of professional video production. It also explores video production and editing through the use of professional broadcast-quality digital video cameras and computer-based edit and compositing systems. The course also stresses professional outcomes through videotaping activities in the studio as well as on campus. (5 contact hours: 2 lecture, 3 lab)

MDIA 1205 Video II: Action Videography and Video Techniques **3 Credits**

Prerequisite: MDIA 1200

Unique camera angles and movement often accompany world-class media productions. Methods of attaining such shots are a process of technical acuity and accuracy. This course surveys the techniques used by standard and action videographers and implements them in real-world situations. It encourages the development of creative application to provide the videographer with greater range of artistic options. Students will include documentation of individual projects and uses of such special-effects camera tools in their portfolios. (5 contact hours: 2 lecture, 3 lab)

MDIA 1300 Radio I: Introduction to Radio Production and Broadcast **3 Credits**

This introductory course provides practical experience in radio broadcast production using Lakeland's radio station WTLS as a working laboratory. Instruction focuses on radio production techniques and their use in a professional situation. This course provides students with practical training in applying principles of radio production and operation from a commercial as well as noncommercial point of view. (5 contact hours: 2 lecture, 3 lab)

MDIA 1305 Radio II: Advanced Radio Techniques **3 Credits**

Prerequisite: MDIA 1300

Unique and fast-paced broadcast radio marks today's airwaves. Methods of attaining such productions require skill and education to provide a process of technical acuity and accuracy. This course surveys the techniques used by radio and broadcast audio stations and implements them in real-world situations. It encourages the development of creative application to provide the radio engineer with greater range of artistic as well as technical options. (5 contact hours: 2 lecture, 3 lab)

MDIA 1320 Live Radio Performance and Engineering **2 Credits**

Prerequisite: MDIA 1300

This course explores many aspects of the live broadcast industry as it relates to radio and sound transmission. Through case study, example, and practical application, students will experience the challenges of live production situations. (4 contact hours: 1 lecture, 3 lab)

MDIA 1400 Audio I: Introduction to Audio Production and Recording **(TAG) 3 Credits**

This course is an introduction to the operation and maintenance of professional and semi-professional audio recording equipment. Through lecture and a hands-on approach in various lab activities, the course explores musical, business, and session-planning skills. Students will realize recording projects through the use of stereo and multitrack analog and digital tape-based systems. The course also explores editing and mastering functions through the use of various computer-based (Windows and Macintosh) integrated systems. It stresses professional outcomes through recording activities on campus, as well as a class project produced at a local world-class audio recording facility. (5 contact hours: 2 lecture, 3 lab)

MDIA 1405 Audio II: Recording and Studio Techniques **3 Credits**

Prerequisite: MDIA 1400

Building upon skills acquired in MDIA 1400 Audio I: Introduction to Audio Production and Recording, this course helps students to develop technical independence in the essential aspects of audio recording and production. Students will develop professional skills, work habits, and attitudes through in-house and on-location recording projects. Students will realize recording projects, music production, and engineering for commercial use, for albums, and for video, through the use of stereo and multitrack analog and digital tape-based systems. The course also explores editing and mastering functions through the use of various computer-based (Windows and Macintosh) integrated systems. Industry skills, including studio construction and business plans, emerge on an individual basis as well as through a class project at a local, world-class audio recording facility. (5 contact hours: 2 lecture, 3 lab)

MDIA 1420 Basics of Sound Reinforcement **3 Credits**

Prerequisite: MDIA 1400 (can be taken concurrently)

This course provides students with a hands-on lab setting which presents professional techniques of all aspects of the sound system control and configuration. It includes, as part of its requirements, the production of a live media performance as well as the theoretical understanding of system design and implementation. Students will review case studies in sound system design from a stadium installation to a podium microphone for a small meeting. Students will learn to work quickly and effectively under the pressure of live performance and develop the ability to be functional in such interdisciplinary media settings as is found in live sound engineering. (5 contact hours: 2 lecture, 3 lab)

MDIA 1500 Interactive Media I: Introduction to Interactive Production **3 Credits**

This course is an introduction to the important components and issues of designing, reviewing, and producing multimedia, including markets, content, components, and phases of production. Students will gain familiarity with media's delivery vehicles such as the World Wide Web and Optical Master. The course places emphasis on the process of building multimedia products through lecture and lab exercises and provides insights into its aesthetic and historical framework. (5 contact hours: 2 lecture, 3 lab)

MDIA 1505 Interactive Media II: Interactive Production Technology **3 Credits**

Prerequisite: MDIA 1500

This course provides an introduction to interactive media production, with an emphasis on the basics of authoring, audio, design, graphics, and video. It discusses development of multimedia models, topics, planning, and design in a project team framework and demonstrates the uses of software and equipment in authoring, graphics, audio, and video. (5 contact hours: 2 lecture, 3 lab)

MDIA 1540 Interactive Media Design Theory **2 Credits**

Prerequisite: MDIA 1500

This course provides a basic knowledge of interface design as it applies to interactive media and Web application. It emphasizes developing interfaces in an evolving art, which requires a broad set of skills. This course discusses and describes predominant interface theories and designs. (3 contact hours: 1 lecture, 2 lab)

MDIA 1600 Animation I: Introduction to Two and Three-Dimensional Animation **3 Credits**

This course provides an introduction to the important components and issues of designing, reviewing, and producing animation, including markets, content, components, and phases of production. Students will gain familiarity with the tools, techniques, and applications of computer animation software in the two and three-dimensional worlds. The course places emphasis on the process of building animation and cartoon products through lecture and lab exercises and provides insight into its aesthetic and historical framework. (5 contact hours: 2 lecture, 3 lab)

MDIA 1605 Animation II: Two Dimensional Animation and Cartooning **3 Credits**

Prerequisite: MDIA 1600

This course is a technique builder to animation production with an emphasis on the basics of computer aided authoring, design, graphics, and drawing. It discusses development of media models, teamwork, planning and design through project and exercises and demonstrates the uses of software and equipment in compiling two dimensional animations, graphics, audio and video. (5 contact hours: 2 lecture, 3 lab)

MDIA 1640 Cartoon Animation Drawing **2 Credits**

Prerequisite: MDIA 1600 (can be taken concurrently)

The art of animated cartoon drawing has been a prevalent and popular communication and entertainment tool since the inception of motion pictures. This course explores the application and implementation of animation and the integration of the applied art of cartooning with computer animation platforms. It describes the role and duties of the animator in both artistic and corporate situations. (3 contact hours: 1 lecture. 2 lab)

MDIA 1700 Interactive Entertainment I: Introduction to Entertainment Production **3 Credits**

This course is an introduction to the important components and issues of designing, reviewing, and producing interactive entertainment products, such as video games, video on demand systems, and interactive entertainment Web sites. Students will gain familiarity with media's delivery vehicles such as various game platforms as well as computer game development. The course places emphasis on the process of building interactive entertainment products through lecture and lab exercises and provides insight into its aesthetic and historical framework. (5 contact hours: 2 lecture, 3 lab)

MDIA 1705 Interactive Entertainment II: Interactive Game Design Techniques **3 Credits**

Prerequisite: MDIA 1700

This course is an introduction to techniques used in interactive game programming and production with an emphasis on the basics of authoring, audio, design, graphics, and video. It discusses development of game models, topics, planning, and design in a project team framework and demonstrates the uses of software and equipment in authoring, graphics, audio, and video. (5 contact hours: 2 lecture, 3 lab)

MDIA 1740 Interactive Entertainment Design Theory **2 Credits**

Prerequisite: MDIA 1700

This course provides a basic knowledge of interface design and game logic as it applies to interactive entertainment applications. It emphasizes developing interfaces and concepts in an evolving art, which requires a broad set of skills. This course discusses and describes predominant interface theories and designs. (3 contact hours: 1 lecture, 2 lab)

MDIA 2080 Staff Practice II **1 Credit**

Prerequisite: MDIA 1080, MDIA 2200 or MDIA 2300 or MDIA 2400 or MDIA 2500 or MDIA 2600 or MDIA 2700

The advanced production requirement of all Media Technology programs, this course provides students with an open forum for the development of media technology engineering and business skills. Through direct application of the craft of broadcast media, students will apply media industry skills necessary for successful employment in the industry. Capstone projects provide direct demonstrations of students' independent abilities as an engineer, a producer, a project leader, or a team member in both group and individual settings. (5.5 contact hours: 0.25 lecture, 5.25 lab)

MDIA 2200 Video III: Electronic News Gathering **3 Credits**

Prerequisite: MDIA 1205 (can be taken concurrently)

One of the most important uses of broadcast media is the dissemination of information critical to the public interest. In times of crisis, broadcast news becomes crucial to educate the population. This course develops methods and techniques pertinent to the art of audio-only news reporting and explores the art of writing for television news in depth. Through a partnership with Cable News Network (CNN), lecture, historical analysis, and practical application, this course provides the building blocks for effective video journalism. (5 contact hours: 2 lecture, 3 lab)

MDIA 2205 Video IV: Independent Commercial Video Production **3 Credits**

Prerequisite: MDIA 2200

This capstone course for the Video Production series is designed to provide a vehicle for students to realize real-world broadcast media projects. Professional broadcast productions require much technical and aesthetic know-how. This course explores the world of media productions through a series of case studies in the media industry. Students will apply impressions and conclusions from the studies to scenarios, both in simulated and real world situations. Final projects present true-world demonstration of individual production and on-air abilities. (5 contact hours: 2 lecture, 3 lab)

MDIA 2260 Video Compositing and Special Effects **2 Credits**

Prerequisite: MDIA 1205 (can be taken concurrently)

The creation of proper impressions in television and video production is often the responsibility of special effects supervisors and compositing experts. This course studies by survey, analysis, and practical application, the jobs, roles, and function of individuals responsible for providing special lighting, special effects, and computer-rendered manipulation. It presents and explains specific tasks, compositional style, graphic overlays, and chroma-key scenarios which students will then apply in individual and group projects. (3 contact hours: 1 lecture, 2 lab)

MDIA 2265 Sports Reporting, Commentary and Videography **2 Credits**

Prerequisite: MDIA 1200 (can be taken concurrently)

Among the important uses of television communication is the live reporting of sporting events. "Color" commentary and live sport event reporting are skills that demand quick action and, especially in radio, impromptu verbal imagery that captivates and informs the listener. The production of live action videography, especially as it relates to sports, is a special trade that requires quick decisions and serious management skills. This course provides, through studied example and real-world practice, all aspects of sporting event videography and commentating for effective broadcast journalism. (3 contact hours: 1 lecture, 2 lab)

MDIA 2300 Radio III: Electronic News Gathering **3 Credits**

Prerequisite: MDIA 1305

One of the most important uses of broadcast media is the dissemination of information critical to the public interest. In times of crisis, broadcast news becomes crucial to educate the population. This course develops methods and techniques pertinent to the art of audio-only news reporting and explores the art of writing for radio news in depth. Through a partnership with Cable News Network (CNN), lecture, historical analysis, and practical application, this course provides the building blocks for effective radio journalism. (5 contact hours: 2 lecture, 3 lab)

MDIA 2305 Radio IV: Commercial Radio Production **3 Credits**

Prerequisite: MDIA 2300

This capstone course for the Radio Production and Broadcast series is designed to provide a vehicle for students to realize real-world broadcast media projects. Professional broadcast productions require much technical and aesthetic know-how. This course explores the world of media productions through a series of case studies in the media industry. Students will apply impressions and conclusions from the studies to scenarios, both in simulated and real-world situations. Final projects present true-world demonstration of individual production and on-air abilities. (5 contact hours: 2 lecture, 3 lab)

MDIA 2340 Radio Business Techniques and Broadcast Direction **2 Credits**

Prerequisite: MDIA 1305

This survey course traces the history and development of the business of presenting audio in a broadcast format from its first iteration to the present. Accompanying the history and evolution of the technology is a study of the business practices, political struggles, and legal ramifications of activities in the broadcast industry, including license, performance rights, and copyright. It traces the roles of radio management through demonstration, case study, and active example made pertinent to the media business of today. (2 contact hours)

MDIA 2400 Audio III: Sound Shaping and Advanced Production **3 Credits**

Prerequisite: MDIA 1405

Audio Recordings and Productions must not only encompass technical criteria for perfection, but also must satisfy artistic qualities to be a success in the media industry. This course develops awareness of the artistic attributes that make audio productions noteworthy and presents the methodology of expert technique. Through case study and practical application students will learn fine points of the audio industry as well as develop business skills that lead to a successful media career. (5 contact hours: 2 lecture, 3 lab)

MDIA 2405 Audio IV: Advanced Recording and Editing **3 Credits**

Prerequisite: MDIA 2400

This capstone course for the Media Technology Certificate in Audio Engineering Production prepares the audio engineer for a career in the media industry. Through individual and team efforts, students will prepare noteworthy audio productions in a variety of media formats. The course stresses artistic attributes and perfection of technical abilities as well as a professional approach to a deadline-oriented business. This course helps students bridge the gap between amateur and professional and provides a framework for future employment. (5 contact hours: 2 lecture, 3 lab)

MDIA 2420 Foley Sound Design and Recording **2 Credits**

Prerequisite: MDIA 1405

Audio production work is employed in the radio, motion picture, and television industries. Sound production for such media usually takes the form of live recording, studio sound, or Foley design. This course increases students' awareness and applicational ability of sound design. It reinforces the associated process of recording, editing, and critical listening with emphasis on creatively recreating sounds to accompany motion picture or for special audio effect. (4 contact hours: 1 lecture, 3 lab)

MDIA 2500 Interactive Media III: Multiple Media Integration **3 Credits**

Prerequisite: MDIA 1505 or permission of instructor

This course explores the tools and applications that provide for the incorporation of audio, video, graphics, and content into an interactive computer-based delivery medium. Through a variety of lecture and lab activities, the course uses computer-based media systems to develop the necessary skills for professional interactive media integration. Programs utilized include industry standard integration packages such as Macromedia Director and Web authoring and development tools. (5 contact hours: 2 lecture, 3 lab)

MDIA 2505 Interactive Media IV: Advanced Interactive Presentation **3 Credits**

Prerequisite: MDIA 2500

This studio course acquaints students with major aspects of interactive media portfolio preparation and presentation. Emphasis is on team production, with each student preparing a personal portfolio. This capstone course introduces and studies professional criteria necessary for employment in the media industry. (5 contact hours: 1 lecture, 4 lab)

MDIA 2560 Interactive Educational Design **2 Credits**

Prerequisite: MDIA 2500

Interactive media is a method of communication which is becoming a prevalent form of information dissemination. Its design and structure make it a perfect vehicle for educating large numbers of people over great distances. This course explores the philosophy, application, and implementation of interactive educational programming and describes the role and duties of Informational Technologists in both individual and corporate situations. (3 contact hours: 1 lecture, 2 lab)

MDIA 2600 Animation III: Three Dimensional Animation **3 Credits**

Prerequisite: MDIA 1605

This course explores the tools and applications that provide three-dimensional animation for video, cartoon, and special effects graphic content as delivered through an interactive computer-based system. Through a variety of lecture and lab activities, the course will use animation development systems to develop the necessary skills of the professional animator. Programs utilized in this class will include industry standard integration packages. (5 contact hours: 2 lecture, 3 lab)

MDIA 2605 Animation IV: Advanced Animation **3 Credits**

Prerequisite: MDIA 2600

This capstone course for the Animation and Cartoon Arts series is designed to prepare students for a career in the animation industry. Through individual and team efforts, students prepare noteworthy animated and cartoon productions in a variety of media formats. The course stresses artistic attributes and perfection of technical abilities as well as a professional approach to a deadline-oriented business. (5 contact hours: 2 lecture, 3 lab)

MDIA 2660 Virtual Set and World Design **2 Credits**

Prerequisite: MDIA 2600

The design of visual backgrounds used in media presentations has become a large part of the broadcast and interactive media industry. Designing two and three-dimensional "virtual sets" has become so sophisticated that it is often difficult to determine what backgrounds are real and which have been created by the virtual artist. This course explores the application and implementation of computer animation platforms in the design and development of virtual worlds and explains through practical application the interaction of virtual and real world media components. (4 contact hours: 1 lecture, 3 lab)

MDIA 2700 Interactive Entertainment III: Applied Game Logic **3 Credits**

Prerequisite: MDIA 1705

This course explores the integration of tools and applications for game development with principles of game logic and artistic design. Through a variety of lecture and lab activities, the course will use computer-based media systems to develop the necessary skills for professional interactive media integration. Programs utilized in this class will include industry standard development packages providing computer-based games as well as games for standard industry video platforms. (5 contact hours: 2 lecture, 3 lab)

MDIA 2705 Interactive Entertainment IV: Advanced Game Design and Production **3 Credits**

Prerequisite: MDIA 2700

This studio capstone course acquaints students with major aspects of interactive entertainment portfolio preparation and presentation. Emphasis is on team production, with each student preparing a personal portfolio. The course introduces and studies professional criteria necessary for employment in the game media industry. (5 contact hours: 2 lecture, 3 lab)

MEDICAL ASSISTING

MDAS 1110 Introduction to Medical Assisting **3 Credits**

Prerequisite: HLTH 1215

This course focuses on preparing for the career of medical assisting. It addresses study skills, therapeutic communications, professional societies, and duties of medical office personnel, including screening and processing mail, scheduling and monitoring appointments, and the physical management of the office. (4 contact hours: 2 lecture, 2 lab)

MDAS 1150 Medical Office Insurance and Reimbursements **3 Credits**

Prerequisite: HLTH 1215

This course focuses on the concept of medical insurance and billing procedures for the medical office. It includes the use of insurance terminology, types of insurance coverage, assignment of benefits, and claim forms preparation. (4 contact hours: 2 lecture, 2 lab)

MDAS 1210 Basic Patient Skills **2 Credits**

Prerequisite: HLTH 1238, MDAS 1110, MDAS 1150

This course applies the theory and practice of common procedures in the physician's office related to the medical record and patient care. Students will learn the medical assistant role in patient charting and documenting in a patient's medical record, which includes performing patient screening using established office protocols, performing and documenting vital signs/anthropometric measurements, and common methods and instruments used to assist a physician during a physician exam. (4 contact hours: 1 lecture, 3 lab)

MDAS 1220 Specialty Medical Assisting **3 Credits**

Prerequisite: HLTH 1238, MDAS 1110, MDAS 1150

This course applies the theory and practice of common procedures in a physician's office related to pharmacology and specialty examinations. Students will discuss the medical assistant's role in identifying common pathology related to body systems, diagnostic measurements, treatment modalities, patient instruction, and the role of the medical assistant in preparation and administration of medications under the direction of a physician. (7 contact hours: 1 lecture, 6 lab)

MDAS 1250 Medical Office Surgical Procedures **2 Credits**

Prerequisite: HLTH 1238, MDAS 1110 or MDAS 1150

This course introduces students to surgical asepsis, instrumentation, common procedures, and sterilization procedures. (3 contact hours: 1 lecture, 2 lab)

MDAS 1300 Physician Office Laboratory **2 Credits**

Prerequisite: HLTH 1215, HLTH 1238, MDAS 1110

This course focuses on the fundamentals of laboratory procedures for students preparing for a career in Medical Assisting, including theory and practice in basic CLIA (Clinical Laboratory Improvement Amendment) waived tests, specimen transport, laboratory safety, and quality control. (3 contact hours: 1 lecture, 2 lab)

MDAS 1700 Medical Assisting Practicum **3 Credits**

Prerequisite: CPR-American Heart Association: Health Care Provider, successful completion of all other courses required in the Medical Assisting program, MDAS 1800 (must be taken concurrently)

This course specializes in the application of skills acquired in previous medical assisting coursework. Students will gain experience in both administrative and clinical office procedures. (15 contact hours: 15 clinical)

MDAS 1800 Medical Assisting Seminar **1 Credit**

Prerequisite: successful completion of all other courses required in the Medical Assisting program, MDAS 1700 (must be taken concurrently)

This course introduces issues and trends in medical assisting, government regulations, professional development, employment opportunities, interviewing techniques, resume writing, job seeking skills, and discussion of practicum experiences. (1 contact hour)

MEDICAL LABORATORY TECHNOLOGY

MDLT 2150 Hematology and Coagulation **(TAG) 5 Credits**

Prerequisite: admission to Medical Laboratory Technology program or permission of program director

This course presents hematological and coagulation theory and practice. It focuses on analysis of red blood cells and white blood cells, normal and abnormal cellular maturation and function, anemia and leukemia, and the coagulation pathway. Laboratory experience includes complete blood counts, normal and abnormal differentials, and coagulation procedures. Students will learn how to correlate laboratory results with disease states. (9 contact hours: 3 lecture, 6 lab)

MDLT 2151 Blood Collection Techniques **1 Credit**

Prerequisite: MDLT 2150 (can be taken concurrently) or admission to the Medical Assisting program or permission of the MDLT program director

This course introduces students to theory and practice of blood collection. It focuses on the phlebotomy process and the role of the laboratorian in the pre-analytical process. Laboratory experience includes phlebotomy techniques. Students will learn how to correlate laboratory results with errors in the pre-analytical process. (1.6 contact hours: 0.7 lecture, 0.9 lab)

MDLT 2152 Urinalysis **(TAG) 1 Credit**

Prerequisite: MDLT 2150 (can be taken concurrently) or permission of program director

This course presents the theoretical and practical aspects of urinalysis. The laboratory portion of the course includes physical, chemical, and microscopic urinalysis procedures. Students will learn how to correlate laboratory results with disease states. (1.6 contact hours: 0.7 lecture, 0.9 lab)

MDLT 2153 Body Fluid Analysis **(TAG) 1 Credit**

Prerequisite: MDLT 2150 (can be taken concurrently) or permission of program director

This course presents the theoretical and practical aspects of body fluid analysis. The laboratory portion of the course includes body fluid cell counts and cell identification. Students will learn how to correlate laboratory results with disease states. (1.6 contact hours: 0.7 lecture, 0.9 lab)

MDLT 2250 Clinical Immunology **3 Credits**

Prerequisite: admission to Medical Laboratory Technology or Histotechnology program; or permission of program director

This course covers the human immune system, including the characteristics of antigens and antibodies, cellular interactions, and types of immune response and complement. It also addresses infectious diseases and the body's immunological response to them, along with autoimmune and immune deficiency disorders and hypersensitivity. Laboratory procedures include agglutination reactions, precipitation reactions, labeled immunoassays, immunofixation electrophoresis, and molecular diagnostic techniques. Students will learn to correlate laboratory results with disease states. (5 contact hours: 2 lecture, 3 lab)

MDLT 2350 Immunohematology **4 Credits**

Prerequisite: MDLT 2250 (can be taken concurrently)

This course specializes in the study of blood grouping systems and includes the principles involved in the transfusion of blood and blood products. Laboratory procedures include blood typing, antibody identification, and antiglobulin and compatibility testing. Students will learn how to correlate laboratory results with disease states. (8 contact hours: 2 lecture, 6 lab)

MDLT 2550 Clinical Chemistry **5 Credits**

Prerequisite: CHEM 1150

This course specializes in the measurement of chemical components in the blood for the purpose of diagnosis, prognosis, and the treatment of disease. It emphasizes analytical principles, sources of error, and quality control. Laboratory procedures include analysis of proteins, carbohydrates, enzymes, lipids, and electrolytes. Students will learn to correlate laboratory results with disease states. (9 contact hours: 3 lecture, 6 lab)

MDLT 2650 Clinical Microbiology **5 Credits**

Prerequisite: BIOL 2700

This course specializes in clinical bacteriology, including the various families and genera of gram positive and gram negative bacteria and the common features of the important species within each group. Students will study medical fungi and parasites. Laboratory procedures include specimen collection and processing as well as the identification of disease-causing organisms, according to their colonial morphology, growth characteristics, and biochemical reactions. Students will learn to differentiate normal flora from potential pathogens related to specific body sites. (9 contact hours: 3 lecture, 6 lab)

MDLT 2750 Clinical Directed Practicum **6 Credits**

Prerequisite: MDLT 2150, MDLT 2151, MDLT 2152, MDLT 2153, MDLT 2250, MDLT 2350, MDLT 2550, MDLT 2650, MDLT 2850 (must be taken concurrently)

This course includes practical application of procedures previously learned through the study of hematology, immunohematology, chemistry, microbiology, coagulation, and urinalysis. Students will gain experience in laboratory procedures as performed in the hospital clinic laboratory or associated facilities. (30 contact hours: 30 clinical)

MDLT 2850 Medical Laboratory Technology Seminar **2 Credits**

Prerequisite: MDLT 2150, MDLT 2151, MDLT 2152, MDLT 2153, MDLT 2250, MDLT 2350, MDLT 2550, MDLT 2650, MDLT 2750 (must be taken concurrently)

This course specializes in issues and trends in medical laboratory technology, healthcare ethics and law, government regulations, professional development, employment opportunities, interviewing techniques, resume writing, and job seeking skills. It uses case studies to integrate previous course work with clinical experience. (2 contact hours)

MODERN LANGUAGES

(See American Sign Language, Chinese, French, German, Italian, Slovenian, and Spanish)

MUSIC

MUSC 1000 Group Voice **1 Credit**

This course combines both group and individual voice instruction. It introduces basics of pitch accuracy, rhythm, music reading, breathing, posture, stagemanship, and group blending. The course requires no audition, but individual practice is necessary. Students may take this course up to two times for credit. (2 contact hours: 2 lab)

MUSC 1030 Group Guitar I **1 Credit**

This introductory course in music reading and guitar playing is geared to a group approach. It includes beginning techniques for developing skills of harmonizing melodies, improvising, and identifying small intervals (up to the fifth). Students will provide their own instruments, although a basic acoustic folk guitar will be sufficient for the course. (2 contact hours: 2 lab)

MUSC 1050 Group Piano I **(TAG) 1 Credit**

This introductory course in music reading and piano playing is geared to a group approach, using a 16-unit electronic keyboard laboratory. It includes beginning techniques for developing skills of harmonizing melodies, improvising, and identifying small intervals (up to the fifth). Students may practice on college instruments. (2 contact hours: 2 lab)

MUSC 1100 Group Piano II **(TAG) 1 Credit**

Prerequisite: MUSC 1050 or permission of instructor

This course is a continuation of MUSC 1050 Group Piano I, developing (to an early intermediate level) skills of piano playing, music reading, harmonization of melodies, improvisation, and identifying larger intervals (the sixth and seventh). Students will also begin learning scales. The course uses a 16-unit electronic laboratory. Students may practice on college instruments. (2 contact hours: 2 lab)

MUSC 1130 Group Guitar II **1 Credit**

Prerequisite: MUSC 1030 or permission of instructor

This course is a continuation of MUSC 1030 Group Guitar I, developing (to an early intermediate level) skills of guitar playing, music reading, harmonization of melodies, improvisation, and identifying larger intervals (the sixth and seventh). Students will also continue to begin scales. Students will provide their own instruments, although a basic acoustic folk guitar will be sufficient for the course. (2 contact hours: 2 lab)

MUSC 1200 Music Appreciation **(TM) 3 Credits**

This survey course provides an introduction to aesthetic and historic issues relating to musical works of major composers. The course emphasizes the skill of active listening to music. Topics include instruments of the orchestra as well as works and influences of composers. Students will study both instrumental and vocal works. This course requires no musical background or skills. (3 contact hours)

MUSC 1215 World Music **(TM) 3 Credits**

This course investigates a variety of musical factors via examples/comparisons drawn from a wide array of styles including classical, jazz, rock/pop, and international. Factors include rhythm, melody, tone-color, texture, harmony, form, improvisation, and technology. This course requires no musical background or skills. (3 contact hours)

MUSC 1250 Applied Music **(TAG)1-2 Credits**

These courses provide voice, piano, or other instrumental study through private lessons arranged with the Fine Arts Association of Willoughby, Ohio, and other qualified and approved studios. The level of study ranges from beginning to advanced. Students enroll for either a one-half hour or a one hour lesson per week. The student pays the college for the credit, but pays lesson fees to the instructor. Fees and payment policies (e.g., in advance for the month) vary by instructor. Students can take up to 4 applied music courses for credit. Students can repeat any course as part of this total of 4 courses. (1.5 or 3 contact hours: 0.5 or 1 lecture, 1 or 2 lab)

MUSC 1251 Applied Music-Voice	**(TAG)**
MUSC 1252 Applied Music-Piano	**(TAG)**
MUSC 1253 Applied Music-Popular Jazz Piano	**(TAG)**
MUSC 1254 Applied Music-Organ	**(TAG)**
MUSC 1255 Applied Music-Flute	**(TAG)**
MUSC 1256 Applied Music-Oboe	**(TAG)**
MUSC 1257 Applied Music-Clarinet	**(TAG)**
MUSC 1258 Applied Music-Bassoon	**(TAG)**
MUSC 1259 Applied Music-French Horn	**(TAG)**
MUSC 1260 Applied Music-Trumpet	**(TAG)**
MUSC 1261 Applied Music-Trombone	**(TAG)**
MUSC 1262 Applied Music-Tuba	**(TAG)**
MUSC 1263 Applied Music-Percussion	**(TAG)**
MUSC 1264 Applied Music-Violin	**(TAG)**
MUSC 1265 Applied Music-Viola	**(TAG)**
MUSC 1266 Applied Music-Cello	**(TAG)**
MUSC 1267 Applied Music-String Bass	**(TAG)**
MUSC 1268 Applied Music-Guitar	**(TAG)**
MUSC 1269 Applied Music-Harp	**(TAG)**
MUSC 1270 Applied Music-Saxophone	
MUSC 1271 Applied Music-Euphonium	

MUSC 1400 Survival in the Music Industry **3 Credits**

This course introduces students to the practical realities of the music business, investigating such areas as the copyright laws, royalties, agents and agencies, management, contracts, unions, licensing, motivation, and self-promotion. The course requires no musical background or skills. (3 contact hours)

MUSC 1410 Creating and Marketing a Song **3 Credits**

This course introduces songwriters/composers to methods of marketing their work. It presents essential information pertaining to relevant copyright laws, performance rights, organizations and provisions, and practical career information (e.g., discipline, time and money management), especially as they relate to the publishing and recording industries. The course addresses song-related material which is important to professionals such as producers, bandleaders, and listeners, as well as aspiring composers. This course requires no musical background or skills. (4 contact hours: 2 lecture, 2 lab)

MUSC 1500 Music Fundamentals **3 Credits**

This course introduces basics of the skills needed for reading/writing music (notation). It also introduces the fundamentals of major and minor scales, intervals, triads, and rudimentary chords. It uses classical, jazz and pop/rock forms and styles for analysis. This course requires no musical background or skills. (3.5 contact hours: 2.5 lecture, 1 lab)

MUSC 1600 Theory I **(TAG) 4 Credits**

This course is designed for, but not limited to, music majors. It presents basic aspects of music notation, intervals, major/minor scales, rhythm, triads, four-part harmonic treatment and tonality/modality. It also initiates development of skills including sight-singing, keyboarding, and music dictation (ear training). (6 contact hours: 3 lecture, 3 lab)

MUSC 1700 Theory II **(TAG) 4 Credits**

Prerequisite: MUSC 1600 or permission of instructor

This course, a continuation of MUSC 1600 Theory I, is designed for, but not limited to, music majors. It introduces early intermediate levels of musical knowledge/skills relating to notation, intervals/chords, rhythm, harmony and voice leading, sight-singing, keyboarding, and dictation. The course also introduces new dimensions including interval/chord inversions, realization of figured bass, harmonization of melodies, and secondary triads. (6 contact hours: 3 lecture, 3 lab)

MUSC 1800 Popular Music: Rock, Jazz, Country, and Hip-Hop **(TM) 3 Credits**

This survey course provides an introduction to the history of the musical styles that comprise American popular music: blues, ragtime, Dixieland, swing, Broadway musicals, country, folk-pop, jazz-pop, rhythm and blues, rock, soul, funk, punk, disco, hip-hop, world music, and EDM. It uses recordings, videos, and written sources, along with discussions of social and cultural implications and biographical highlights of selected musicians/entertainers. This course requires no musical background or skills. (3 contact hours)

MUSC 1850 Jazz Improvisation **2 Credits**

Through in-class performances, this course introduces and explores jazz composition and improvisation techniques related to style, rhythm, phrasing, harmony, form, and melodic creativity. Students should possess at least an intermediate level of general performance ability. Students may take this course up to two times for credit. (4 contact hours: 4 lab)

MUSC 2100 Music in the Classroom **3 Credits**

This course, designed for non-music majors, introduces basic musical knowledge/skills which can be applied to the conducting of classroom musical experiences or for personal enjoyment. It includes rudimentary coverage of such aspects as rhythm, pitch, intervals, chords, progressions, and forms. The course initiates skills in playing keyboard and classroom instruments, essential vocal techniques, and active listening. This course requires no musical background or skills. (3.5 contact hours: 2.5 lecture, 1 lab)

MUSC 2200 Music History and Literature I **(TM) 3 Credits**

This survey course provides a chronological/historical approach to the study of musical style development. It includes an overview of the early medieval period through the classic, with special attention to and analysis of major works by major composers and their aesthetic factors. (3 contact hours)

MUSC 2250 Music History and Literature II **(TM) 3 Credits**

This survey course provides a chronological/historical approach to the study of musical style development. It includes an overview of the Romantic and Contemporary periods, with special attention to and analysis of major works by prominent composers and their aesthetic factors. (3 contact hours)

MUSC 2400 Theory III **(TAG) 4 Credits**

Prerequisite: MUSC 1700 or permission of instructor

This course, a continuation of MUSC 1700 Theory II, is designed for, but not limited to, music majors. It helps students develop their knowledge/skills to an upper intermediate level. In addition, it studies the process of modulation, non-dominant sevenths, and jazz and pop/rock variants of selected aspects. The course also includes a comprehensive analysis of representative musical works, sixteenth- and eighteenth-century polyphonic techniques, and variations procedures. (6 contact hours: 3 lecture, 3 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

MUSC 2500 Theory IV **(TAG) 4 Credits**

Prerequisite: MUSC 2400 or permission of instructor

This course, a continuation of MUSC 2400 Theory III, helps students develop their knowledge/skills to an advanced undergraduate level. In addition, it studies tertian chord structures to the 13th, Neopolitan and augmented 6ths, chromatic mediants, sonata-allegro form, and 20th-century techniques (e.g., atonal and serial composition). (6 contact hours: 3 lecture, 3 lab)

MUSC 2650 Electronic Music I **2 Credits**

This course introduces, through a combination of lecture and hands-on training, the basic aspects of the modern era of music production. It includes components of history, current trends, and composition of contemporary artistic electronic and computer-generated music. Students will develop sounds, score, and realize music as creative projects using analog, digital, sampler, and hybrid synthesizers. The course also introduces computer music applications (Windows and Macintosh) as well as Musical Instrument Digital Interface (MIDI) sequencing and editing. (3 contact hours: 1 lecture, 2 lab)

MUSC 2660 Electronic Music II **2 Credits**

Prerequisite: MUSC 2650 or permission of instructor

This course, a continuation of MUSC 2650 Electronic Music I, furthers students' study of the modern era of electronic music production through a combination of lecture, demonstration, and hands-on training. The course stresses a high degree of independent work and self-evaluation, and advances students' development of composition with increasingly more sophisticated aesthetic results. The development of a Personal Music Studio emerges through the review of many of the modern offerings of the music industry. Advanced technical topics include business skills for the entrepreneurial musician wishing to be a self-starter in the music business. (3 contact hours: 1 lecture, 2 lab)

MUSC 2700 Small Group Music **1 Credit**

Prerequisite: permission of instructor

This course provides students with the experience of participating in a small-group music performance ensemble. The course places emphasis on literature from various historical periods and on the musical development of the individual. Students will participate in groups from three to eight students and one faculty coach and present at least one performance per semester. Students may take this course up to six times for credit. (2 contact hours: 2 lab)

MUSC 2750 Lakeland Civic Chorus **1 Credit**

Prerequisite: permission of instructor, Fall Semester audition

This course provides students with the experience of participating in a community-service choral singing performance group sponsored by Lakeland. The course places emphasis on choral literature from various historical periods and on the musical development of the individual. Students may take this course up to four times for credit. (2 contact hours: 2 lab)

MUSC 2850 Lakeland Civic Orchestra **(TAG) 1 Credit**

Prerequisite: audition with the conductor

This course provides students with the experience of participating in a community-service orchestral performance group sponsored by Lakeland. The course places emphasis on orchestral literature from various historical periods and on the musical development of the individual. Students may take this course up to four times for credit. (2 contact hours: 2 lab)

MUSC 2890 Lakeland Civic Band **(TAG) 1 Credit**

Prerequisite: permission of instructor

This course provides students with the experience of participating in a community-service concert band performance group sponsored by Lakeland. The course places emphasis on concert band literature from various historical periods and in the musical development of the individual. Students may take this course up to four times for credit. (2 contact hours: 2 lab)

MUSC 2895 Lakeland Jazz Orchestra **1 Credit**

Prerequisite: permission of instructor

This course provides students with the experience of participating in a community-service jazz ensemble performance group sponsored by Lakeland. Students will prepare and present concerts of jazz repertoire with substantial emphasis on improvisation. Students should possess at least intermediate level jazz performance ability/experience. Students may take this course up to four times for credit. (2 contact hours: 2 lab)

NUCLEAR ENGINEERING TECHNOLOGY

NUET 1000 Nuclear Industry Fundamental Concepts **3 Credits**

Prerequisite: placement into ENGL 1110 or ENGL 1111, placement into MATH 1101, admission to the Nuclear Engineering Technology program; or permission of program director

This course introduces fundamental concepts used throughout the nuclear industry as an integral part of daily operations. Topics include Human Performance Enhancement (HPE) fundamentals, an introduction to the Systematic Approach to Training (SAT), conduct of On-The-Job training (OJT) and Task Performance Evaluation (TPE), Foreign Material Exclusion (FME), radiological concepts, including protective clothing dress-out, and an overview of the FirstEnergy Nuclear Operating Corporation (FENOC) safety manual. In addition, it includes OSHA compliance courses required by the Perry Plant and an overview of the regulatory and licensing aspects of a commercial nuclear power plant. The course also provides an introduction to nuclear power plant systems. (3 contact hours)

NUET 1100 Radiation Detection and Protection **3 Credits**

Prerequisite: placement into ENGL 1110 or ENGL 1111, placement into MATH 1101, admission to the Nuclear Engineering Technology program; or permission of program director

This course presents the theory, application detection and shielding of the various types of radiation. It also covers detection devices such as typical survey meters, core power detectors and personnel monitoring devices. The course will also discuss how exposure to radiation can be minimized and the biological impact of radiation. (4 contact hours: 2 lecture, 2 lab)

NUET 1200 Plant Drawings **3 Credits**

Prerequisite: NUET 1000 or ELEC 1120

This course covers the use of and relationship among typical drawings found at an industrial setting. Topics include using mechanical, electrical, and isometric drawings; the information contained in the lead sheet of a set of drawings; the use of notes and legends; standard symbology used in engineering drawings; and the use of various types of drawings together in order to perform work, locate components, or use for other typical applications. (4 contact hours: 2 lecture, 2 lab)

NUET 1300 Power Plant Components **3 Credits**

Prerequisite: NUET 1000

This course introduces students to fundamental components and pieces of equipment that are used throughout electrical power generating facilities such as pumps, valves, heat exchangers, motors, and generators. It also includes lubrication principles, fire barriers, hangers and snubbers, HVAC systems, and miscellaneous electrical equipment. In addition, the course covers the purpose, construction, theory of operation, and typical maintenance requirements of these devices. (3 contact hours)

NUET 2000 Reactor Plant Materials **3 Credits**

Prerequisite: CHEM 1100, NUET 1000

This course provides students with an understanding of the various materials used in the operation of a nuclear power plant. Topics include phase equilibrium of materials, mechanical properties and behavior of materials, environmental effects on materials, corrosion and impurities effect on reactor plant materials, and nuclear-specific topics such as fuel pellets, fuel rod cladding, control rods, radiation effects on materials, enrichment of radioactive isotopes, and fuel pellet fabrication. (4 contact hours: 2 lecture, 2 lab)

NUET 2050 Nuclear Field Experience **2 Credits**

Prerequisite: permission of Nuclear Engineering Technology department chair, MATH 1101 or MATH 1650, NUET 1000, NUET 1100, NUET 1200, NUET 1300, matriculated into the NUET program with at least 10 credits completed, minimum 3.0 cumulative GPA, and the student must be able to pass Edison Electric Institute (EEI) MOSS/PASS tests, a background check, and drug and psychological screenings as part of the employment process. Background check, drug, and psychological screenings performed by FirstEnergy.

This field experience is a planned paid work activity designed to expose the student to the various technical work areas within a nuclear power plant. The course provides the student with the opportunity to experience day-to-day operations and maintenance procedures associated with a nuclear power plant. This course is a two (2) credit technical elective in the Nuclear Engineering Technology program. (24 contact hours: 24 lab)

NUET 2250 Reactor Theory, Safety and Design **3 Credits**

Prerequisite: NUET 2000 (can be taken concurrently), PHYS 1200

This course provides an understanding of the principles of reactor theory, including the fission process; the neutron life cycle; the concepts of subcritical multiplication, criticality, and reactivity; thermal limits and their importance to operation; the functions and construction of fission product barriers; the practical application of the concepts of defense in depth and redundancy; and the roles of the various employees in reactor safety. In addition, the course discusses reactor protection concepts, Design Basis Accident (DBA), transient preventions and mitigation of core damage, radiochemistry and analysis, and hydrogen gas in reactor water following a transient or accident. (3 contact hours)

NUET 2300 Thermo-Fluid Sciences **4 Credits**

Prerequisite: admission to the Nuclear Engineering Technology program or permission of department chair, MATH 1201, PHYS 1200

This course presents basic concepts of thermodynamics, heat transfer, and fluid dynamics as they apply to power plant applications. It covers the topics of energy, entropy, thermodynamic cycles, and heat transfer. The course also discusses the basics of heat exchangers. (6 contact hours: 3 lecture, 3 lab)

NUET 2400 Capstone and Case Studies in Nuclear Engineering Technology **2 Credits**

Prerequisite: NUET 1100, NUET 1200, NUET 1300, NUET 2000, NUET 2300 (can be taken concurrently); or permission of program chair

This is a capstone course that will utilize topics that were covered throughout the curriculum. A large portion of the course will examine case studies from the nuclear power industry. It will also examine case studies of incidents from other industries. The course will discuss precursors to poor decision making and how the proper use of human performance enhancement (HPE) and event free tools can minimize the risks of accidents. (2 contact hours)

NURSING

NURS 0900 Basic Math Concepts and Drug Dosage Calculations **1 Credit**

This course is designed to facilitate the entering nursing student's mastery of basic math skills as well as to introduce their application to dosage calculation and medication administration. The course takes an integrative approach whenever possible to stress the application of math skills within the context of medication administration. The course grade will be Satisfactory/Unsatisfactory. (1 contact hour)

NURS 1020 Introduction to Nursing **3 Credits**

Prerequisite: admission to Nursing program

This is a theory course that introduces the fundamental concepts that guide quality, safe, patient-centered, evidence-based nursing, founded on the Caritas philosophy. Major program concepts and student learning outcomes presented include: the nursing process, critical thinking, communication, information and technology, management of care, professional identity, and ethical and legal practice in nursing. Students will apply course content while caring for adult patients in NURS 1090 Nursing Care of the Adult I, which is taken concurrently. (3 contact hours)

NURS 1060 Pharmacology Fundamentals and Drug Dosage Calculations **2 Credits**

Prerequisite: admission to Nursing program

This course introduces general principles of pharmacology as they relate to safe, quality, patient-centered, evidence-based nursing care of individuals. Concepts presented include pharmacotherapeutics, the nursing process, critical thinking, quality improvement, and legal responsibilities of the nurse. Included is instruction on dosage calculations of medication for various developmental levels. Students apply course content while caring for adult patients in NURS 1090 Nursing Care of the Adult I, which is taken concurrently. (4 contact hours: 1 lecture, 3 lab)

NURS 1090 Nursing Care of Adults I **4 Credits**

Prerequisite: admission to Nursing program

This is a clinical course that provides an introduction to and application of the fundamental concepts that guide quality, safe, patient-centered, evidence-based nursing, centered on the Caritas philosophy when caring for diverse adult patient populations experiencing common health alterations. It includes the application of additional concepts introduced in NURS 1020 Introduction to Nursing and NURS 1060 Pharmacology and Dosage Calculation. Students will apply knowledge, skills, and attitudes in the Nursing Skills Lab and clinical setting. The course also introduces content related to the nursing process, critical thinking, quality improvement, communication, information and technology, managing care, and professional, legal, and ethical responsibilities of the nurse. (12 contact hours: 12 clinical)

NURS 1250 Nursing Care of Adults II **9 Credits**

Prerequisite: NURS 1020, NURS 1060, NURS 1090; or permission of Nursing program director

This course builds on the content presented in NURS 1020 Introduction to Nursing, NURS 1060 Pharmacology Fundamentals and Dosage Calculation, and NURS 1090 Nursing Care of Adults I. It includes the application of quality, safe, patient-centered, evidence-based nursing, based on the Caritas philosophy when caring for diverse adult patient populations experiencing stable and unstable acute and chronic illnesses. The course also presents content related to the nursing process, critical thinking, quality improvement, communication, information and technology, management of care, and the professional, legal, and ethical responsibilities of the nurse. Students learn additional psychomotor skills in the nursing skills laboratory and apply knowledge, skills, and attitudes in the clinical setting. (17 contact hours: 5 lecture, 12 clinical)

NURS 1300 The Caring Role of the Nurse at the End of Life **1 Credit**

Prerequisite: NURS 1010, NURS 1050, NURS 1080; or licensed RN or permission of instructor

This course provides advanced knowledge and skills required to care for patients and their families at the end of life. Students will discuss critical social, psychological, emotional, and spiritual issues; identify the value of therapeutic communication in relationships with patients; utilize physical assessment skills; and identify principles of pain and symptom management. (1 contact hour)

NURS 1560 Access to Registered Nursing **3 Credits**

Prerequisite: LPN and acceptance into the Access to Registered Nursing Program; or permission of Nursing program director

This is a specialized course which prepares LPNs for a successful transition into the RN program. The course places emphasis on the caring role of the nurse during patient assessments, when applying the nursing process, and when using therapeutic communication skills. Classroom and nursing laboratory experiences provide students with opportunities to learn through the application of nursing concepts. This course meets the curriculum requirements of the Ohio Nursing Articulation Model. (5 contact hours: 2 lecture, 3 lab)

NURS 1610 Transition to the Nursing Care of Adults II **5 Credits**

Prerequisite: NURS 1560 (can be taken concurrently) or permission of Nursing program director

This course emphasizes quality, safe, patient-centered, evidence-based nursing, centered on the Caritas philosophy when caring for diverse adult patient populations experiencing stable and unstable acute and chronic illnesses. It also presents content related to the nursing process, critical thinking, quality improvement, communication, information and technology, management of care, and the professional, legal, and ethical responsibilities of the nurse. (5 contact hours)

NURS 2150 The Caring Role of the Nurse with the Well and Frail Elderly **3 Credits**

Prerequisite: BIOL 2220, NURS 1245, PSYC 2100; or permission of Nursing program director

This specialized course provides students with the opportunity to focus on the caring role of the nurse with the well and the frail elderly client. Students will provide care to the elderly through experiences in long-term care, sub-acute care, and in community settings. The course addresses normal changes of aging and selected acute and chronic conditions. It also discusses health maintenance and health promotion. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2160 Nursing Care of Chronic and Vulnerable Populations **3 Credits**

Prerequisite: BIOL 2220, NURS 1250, PSYC 2100; or permission of Nursing program director

This course builds on the content presented in previous nursing courses. It provides for the application of quality, safe, patient-centered, evidence-based nursing care centered on the Caritas philosophy when caring for chronic and vulnerable populations. Concepts presented include the nursing process related to health promotion, disease prevention, risk reduction, and client empowerment across the lifespan. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2161 Nursing Care of Vulnerable Populations in Global Communities **3 Credits**

Prerequisite: BIOL 2220, NURS 1250, PSYC 2100; or permission of Nursing program director

This course builds on the content presented in previous nursing courses. It provides for the application of quality, safe, patient-centered, evidence-based nursing care centered on the Caritas philosophy when caring for chronic and vulnerable populations in global communities. Concepts presented include the nursing process related to health promotion, disease prevention, risk reduction, and client empowerment across the lifespan. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2210 Nursing Care of Childbearing Families **3 Credits**

Prerequisite: BIOL 2220, NURS 1250, PSYC 2100; or permission of Nursing program director

This course builds on the content presented in all previous nursing courses. It includes the application of the Caritas philosophy to provide quality, safe, patient-centered, evidence-based nursing when caring for diverse patients engaged in the childbearing experience. It also includes application of content related to the nursing process, critical thinking, quality improvement, communication, information and technology, management of care, professionalism and legal/ethical responsibilities of the nurse to the care of the childbearing family. Students will apply knowledge and skills in a variety of clinical settings. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2260 Nursing Care of Children and Families **3 Credits**

Prerequisite: BIOL 2220, NURS 1250, PSYC 2100; or permission of Nursing program director

This course builds on the content presented in all previous nursing courses. It includes the application of quality, safe, patient-centered, evidence-based nursing, centered on the Caritas philosophy when caring for diverse populations of children and families. It also includes application of content related to the legal and ethical responsibilities of the nurse, critical thinking, the nursing process, quality improvement, communication, teamwork/collaboration, leadership, and professionalism to the care of children and their families. Students will apply knowledge and skills in a variety of clinical settings. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2350 The Caring Role of the Nurse with Adults - Level III **4 Credits**

Prerequisite: NURS 2150, NURS 2200, NURS 2250; or permission of Nursing program director

This final medical surgical course promotes the use of complex concepts, principles, and skills in the application of the nursing process and the caring role of the nurse as manager of care. The course places emphasis on nursing care of clients with multi-system cardiovascular, respiratory and hepatic, integument, and renal alterations. It also examines principles and advanced skills needed in the critical care setting. Selected classroom and clinical experiences provide students with new skills and reinforcement/refinement of previously acquired skills including leadership and management of team members. (8 contact hours: 2 lecture, 6 clinical)

NURS 2360 Nursing Care of Adults III **9 Credits**

Prerequisite: NURS 2160, NURS 2210, and NURS 2260; or permission of Nursing program director

This course builds on the content presented in all previous nursing courses. It includes the application of the Caritas philosophy to provide quality, safe, patient-centered, evidence-based nursing care for diverse populations of patients with complex health care needs. The course also includes application of content related to nursing process, critical thinking, quality improvement, communication, information and technology, management of care, and professionalism to the care of patients experiencing physiological and psychosocial alterations. Students will apply and synthesize knowledge, skills, and abilities to promote optimal functioning in a variety of healthcare settings. (17 contact hours: 5 lecture, 12 clinical)

NURS 2450 Caring for Clients Experiencing Mental Health Alterations **3 Credits**

Prerequisite: NURS 2150, NURS 2200, NURS 2250; or permission of Nursing program director

This specialized course provides students with the opportunity to focus on the role of the nurse caring for clients with mental health alterations. The course demonstrates caring through use of the therapeutic nurse-client relationship, group process, and critical thinking skills. It emphasizes the role of the nurse as a provider and manager of care in the acute and community settings. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2500 The Caring Role of the Nurse in the Community **3 Credits**

Prerequisite: NURS 2150, NURS 2200, NURS 2250; or permission of Nursing program director

This specialized course emphasizes the role of the nurse as educator to develop client self-care strategies. It also discusses the nurse as a case manager collaborator, advocate, clinician, and user or research. Selected classroom and clinical experiences provide students with an opportunity to implement the nursing process relating to health promotion, disease prevention, and management of chronic illness. (5.6 contact hours: 1.7 lecture, 3.9 clinical)

NURS 2555 The Caring Role in Managing Nursing Care **1 Credit**

Prerequisite: NURS 2350 (can be taken concurrently), NURS 2450 (can be taken concurrently), NURS 2500 (can be taken concurrently); or permission of program director

This capstone course provides graduating students with the acquisition and further development of knowledge and skills required in the transition from student to practicing registered nurse. This course addresses contemporary health care issues to assist the new graduate to practice registered nursing at entry level. (2 contact hours: 0.5 lecture, 1.5 lab)

NURS 2750 Perioperative Nursing in the Circulating Nurse Role **6 Credits**

Prerequisite: Licensed Registered Nurse in the current state of practice. Acceptance requires background checking and health maintenance requirements established by clinical sites.

This specialized course provides registered nurses with the knowledge and skills needed for the care of the perioperative patient. Clinical experiences provide students with the opportunity to apply the nursing process in the perioperative, intraoperative and immediate postoperative settings. The course includes basic to intermediate knowledge and skills needed to circulate for surgical cases. This course prepares students for acceptance into a basic hospital surgical orientation program for employment as a registered nurse circulator in the operating room. (12 contact hours: 3 lecture, 9 lab)

NURS 2751 Perioperative Nursing in the Scrub Nurse Role **6 Credits**

Prerequisite: NURS 2750, previous experience as a Circulating Nurse; or permission of instructor. Registered Nurse license in the current state of practice. Acceptance requires background checking and health maintenance requirements established by clinical sites.

This specialized course provides registered nurses with the knowledge and skills needed for the care of the patient during intraoperative surgical intervention. Clinical experiences provide students with the opportunity to apply the nursing process in the perioperative setting. The course includes basic to intermediate principles and skill sets needed to scrub for surgical cases that are not offered in nursing programs. This course prepares students for acceptance into a hospital surgical orientation program for employment as a scrub nurse in the operating room. (12 contact hours: 3 lecture, 9 lab)

NURS 2752 Registered Nurse First Assistant in Surgery **6 Credits**

Prerequisite: Registered perioperative nurse for 24 months, admission to the RNFA program, CNOR or CNOR eligible, licensed in the state or province of practice. Advanced practice nurses (certified nurse practitioners, clinical nurse specialists, and certified nurse midwives) do not require the CNOR credential.

This course prepares the qualified perioperative nurse to serve in the role as registered nurse first assistant (RNFA) in surgery and meets and exceeds the credentialing process for this role. Perioperative nurses who fill this role can serve all local surgical facilities and provide needed service to the community. This course provides the next step for Registered Perioperative Nurses. It is designed in compliance with the Competency and Credentialing Institute (CCI) and the state boards of nursing in the U.S. and Canada. Students who successfully complete this course will receive a certificate of completion from the instructor. NOTE: Students must have CNOR or advanced practice nurse (certified nurse practitioner, clinical nurse specialist, or certified nurse midwife) status to be granted the certificate of completion. (12 contact hours: 3 lecture, 9 clinical)

PARALEGAL

PARL 1100 Introduction to Paralegal Studies **3 Credits**

This introductory course explores the role of the paralegal on the legal team, including career opportunities and ethical concerns. Students will learn about sources of law and basic legal concepts and methodologies. (3 contact hours)

PARL 1200 Introduction to Legal Research and Writing **3 Credits**

Prerequisite: ENGL 1110 (can be taken concurrently) or ENGL 1111 (can be taken concurrently), PARL 1100 (can be taken concurrently); or permission of instructor

This course introduces students to case-law based research in print form and on Lexis. It emphasizes shepardizing and citation formatting. Students will prepare legal correspondence and an interoffice memorandum. (3 contact hours)

PARL 1250 Advanced Legal Research and Writing **3 Credits**

Prerequisite: PARL 1200

This course introduces students to statutory and regulatory research and continues development of case based research skills developed in PARL 1200 Introduction to Legal Research and Writing. Students will perform research using a variety of printed materials and on-line tools, including Lexis and Westlaw. Students will convert their research findings into briefs, memos, and letters to clients. The course also introduces students to the Ohio Rules of Citation. (3 contact hours)

PARL 1400 Business Issues in the Law **3 Credits**

Prerequisite: PARL 1100 (can be taken concurrently)

In this specialized course, students will explore the structure and formation of business entities (including partnerships and corporations) and draft documents associated with the formation and maintenance of these bodies. Students will learn the processes involved in bankruptcies and reorganizations and understand the rights of debtors and creditors. (3 contact hours)

PARL 1500 Civil Law and Practice **3 Credits**

Prerequisite: PARL 1100 (can be taken concurrently)

This course surveys Ohio and Federal Rules of Civil Procedure. Students will prepare pleadings and motions based on the Civil Rules and practice methods for assisting the litigation attorney in the office and courtroom. (3 contact hours)

PARL 2000 Real Estate Law and Practice **2 Credits**

Prerequisite: PARL 1100

This course provides students with an overview of the law governing real property, including its sale and lease. Students will draft and examine the instruments utilized in conveyance and lease of real property, and study how land is controlled and regulated. (2 contact hours)

PARL 2100 Probate Law and Practice **2 Credits**

Prerequisite: PARL 1100

This course offers students a basic overview of the law of trusts and estates. Students will draft wills and trust agreements, prepare the numerous documents associated with administration of an estate, and learn the procedures employed by the probate courts. (2 contact hours)

PARL 2199 Business Law I (Contract Law) **3 Credits**

This course provides students with a fundamental understanding of important business law concepts. Content areas include the legal environment and judicial system, the nature and sources of law, administrative law, legal procedures, business torts, property in the business environment, criminal law, employment relationship and equal employment, business ethics and social responsibility in the global environment, contract law, agency, partnerships and corporations, sole proprietorships and franchises, and securities regulation. The course emphasizes practical application of the law where appropriate. This course is cross-listed as BUSM 2100 Business Law I and PARL 2199 Business Law I. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

PARL 2200 Employment Law and the Administrative Process **3 Credits**

Prerequisite: PARL 1100

This course provides students with an overview of federal and state laws and regulations governing the employee/employer relationship, ranging from pre-hire to post-hire and termination concerns. The course explores the involvement of administrative agencies in employment law and provides an overview of administrative policies and procedures. (3 contact hours)

PARL 2250 Alternative Dispute Resolution **2 Credits**

This experiential based course specializes in conflict resolution tools and methodology. Students will negotiate, mediate and arbitrate disputes, with special focus on the role of the paralegal as mediator and arbitrator. (2 contact hours)

PARL 2350 Legal Issues in Cyberspace **2 Credits**

Prerequisite: PARL 1100, PARL 1200

This course introduces students to cyberlaw issues including intellectual property, on-line banking, securities and taxation, cybertorts and crimes, contracts, consumer privacy and employee/employer relations. Students will read and analyze relevant statutory and case law, and prepare forms and documents associated with cyberlaw issues. (2 contact hours)

PARL 2450 Investigative Fact-Finding **2 Credits**

In this specialized course, students will explore the variety of data networks and public records available to lawyers and paralegals engaged in the fact gathering process. Using electronic and print research methods, students will work to identify and locate bad debtors, lost account owners, insurance beneficiaries, and missing persons. The course emphasizes the rights and privileges pursuant to privacy law of individuals targeted for investigation. (2 contact hours)

PARL 2500 Criminal Law and Procedure **3 Credits**

Prerequisite: PARL 1100

This specialized course follows a criminal case through the judicial system. Students will explore constitutional rights and procedural issues and prepare the paperwork associated with criminal litigation. (3 contact hours)

PARL 2550 Litigation Management **2 Credits**

Prerequisite: PARL 1500

In this specialized course, students will examine the role of the attorney and legal assistant in the litigation process. Building upon knowledge gained in PARL 1500 Civil Law and Practice, students will prepare a hypothetical case for trial, including drafting of relevant briefs and documents, preparing witnesses and exhibits, and assisting the attorney within the courtroom. (2 contact hours)

PARL 2650 Family Law **2 Credits**

Prerequisite: PARL 1100

This course introduces students to domestic relations matters, including marriage, divorce, dissolution of marriage, custody, child support, and adoption. Students will prepare forms and documents associated with family law matters and learn methods for navigation through the domestic relations court system. (2 contact hours)

PARL 2695 Legal Workplace Success Strategies **1 Credit**

Prerequisite: PARL 1100, PARL 1200, PARL 1500

This course provides students with practical knowledge of the legal workplace including how to secure a paralegal position and function as a successful member of a legal team. (1 contact hour)

PARL 2700 Legal Internship/Seminar I **3 Credits**

Prerequisite: PARL 1100, PARL 1200, PARL 1500, minimum 2.0 overall GPA, minimum 2.25 GPA in paralegal courses

Students will work for 100 hours within a law office or corporate or government based legal setting. Classroom work provides students with an overview of the procedural and ethical issues faced by a paralegal on the job. (9 contact hours: 1.5 lecture, 7.5 lab)

PARL 2750 Legal Internship/Seminar II **2 Credits**

Prerequisite: PARL 2700, minimum 2.0 overall GPA, minimum 2.25 GPA in paralegal courses

Building upon the experience gained in PARL 2700 Legal Internship/Seminar I, students will perform an additional 100 hours within a law office or corporate or government based legal setting. The classroom portion of the course specializes in ethical concerns involving the attorney-client relationship and the role of the paralegal. (8 contact hours: 0.5 lecture, 7.5 lab)

PARKS AND RECREATION MANAGEMENT

PARK 1100 Introduction to Parks and Recreation Management **3 Credits**

This course provides an overview of the parks and recreation management field, focusing on the historical developments in the field from the early years to the present. It includes the major functions of: programming, facilities and grounds maintenance and management, volunteer management, local/state government, public relations, risk management, fund raising, budgets, customer service, partnerships and collaboration, and the environment. (3 contact hours)

PARK 1200 Recreational Program Planning and Development **3 Credits**

This course introduces the fundamentals of planning and developing a recreational program for a Parks system. Students will gain an understanding of the benefits of leisure activities in today's society. They will also develop an understanding of the importance of community partnerships, the variety of programming areas, volunteerism, and fitness and wellness education. Students will learn about meeting the needs of the specific community they are servicing and gain an understanding of the skills involved in proper budgeting, marketing, and planning and managing a program and personnel to maintain a quality recreational program. The course will provide students with an opportunity to analyze, evaluate, and strategize a creative recreational/leisure program. This course is cross-listed as PARK 1200 Recreational Program Planning and Development and PEHR 1800 Recreational Program Planning and Development. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

PARK 2100 Parks and Recreational Facilities Management **3 Credits**

This course provides an in-depth study of the facilities management field. It includes the major functions of planning and organizing the maintenance program, employee safety, buildings and structures maintenance, general indoor and outdoor maintenance, grounds maintenance, equipment maintenance, and public relations management. (3 contact hours)

PARK 2500 Parks and Recreation Management Internship/Seminar **3-4 Credits**

Prerequisite: BUSM 1300, PARK 1100, PARK 1200, PARK 2100, 33 additional semester credits including 12 credits in BUSM courses, and permission of the Parks and Recreation Management department chair

Students will gain practical experience by working 14 hours per week for 15 weeks within an off-campus work setting in one or more park and/or recreation facility. The in-class seminar portion of the course will serve as a forum for student discussion of on-the-job experiences and issues related to parks and recreation management. In addition, it will help students develop job-seeking skills and provide information pertaining to continued education. (15-22 contact hours: 1 lecture, 14-21 lab)

PHILOSOPHY

PHIL 1300 Thinking Critically **(TM) 3 Credits**

This course introduces students to the logical concepts and skills needed to evaluate common types of motivational appeals encountered in the marketplace, especially in advertising, politics, and the mass media. The subject matter emphasizes decision-making, including how to form rational beliefs and how to decide upon effective action. (3 contact hours)

PHIL 1500 Introduction to Philosophy **(TM, TAG) 3 Credits**

This course introduces students to various intellectual and philosophical problems that have troubled thoughtful people throughout the ages. The areas in which these problems occur include reality, being, knowledge, free will, values, and religion. Classes emphasize discussion and individual feedback. (3 contact hours)

PHIL 2000 Comparative Religion **(TM) 3 Credits**

This course introduces students to the general doctrines, history, and practice of major religions of the world, including Judaism, Christianity, Islam, as well as Hinduism, Buddhism, and religions native to China and Japan. The course presents the subject matter, objectively, for comparison and discussion. Additional topics include religions of pre-history and native American religions. (3 contact hours)

PHIL 2600 Logic **(TM) 3 Credits**

This course studies principles of good reasoning; the principles of reasoning that are truth-preserving instead of motivational. It introduces students to the basic concepts of logic such as statement, argument, validity, and strength of inference. Students will study how to formalize arguments and test them for validity. The major emphasis of this course is on deductive logic. (3 contact hours)

PHIL 2700 Ethics **(TM, TAG) 3 Credits**

Prerequisite: PHIL 1300 or PHIL 1500 or PHIL 2600 or permission of instructor

This specialized course concentrates on the area of philosophy that studies values and ethical theories as well as concepts of justice, freedom, and obligation. A typical class will present and critically discuss various normative ethical theories such as utilitarianism, cultural relativism, and Kantian ethics. Class lectures encourage participation and individual feedback. (3 contact hours)

PHIL 2800 Philosophy of Art **3 Credits**

This course introduces students to various theories about art. The course emphasizes application; students will discuss the theories as they are applied to specific art works, especially the art works that are displayed or being performed on Lakeland's campus. Students will pursue questions about art in a philosophical manner, where specific judgments about art, as well as the theories of art themselves, are subjected to rigorous criticism and analysis. (3 contact hours)

PHIL 2900 Special Topics in Philosophy **3 Credits**

Prerequisite: PHIL 1300 or PHIL 1500 or PHIL 2600 or permission of instructor

These specialized courses provide in-depth examinations of philosophy topics not covered in detail elsewhere in the curriculum. Students will study and philosophically analyze topics such as social and political philosophy, issues in death and dying, bioethics, science and pseudo-science, and advanced logic.

PHOTOGRAPHY

PHOT 1000 History of Photography **(TM) 3 Credits**

This course introduces students to the history of photography, with equal emphasis on technical and aesthetic developments. Field trips will augment slide lectures, depending on gallery and museum schedules. Students must complete a research paper, reading assignments, and in-class presentations. (3 contact hours)

PHOT 1100 Basic Photography **(TAG) 3 Credits**

This course introduces students to the fundamentals of black and white photography. Students must supply their own film cameras with adjustable aperture (f-stop) and shutter speeds. Students will learn how to expose and process film and make prints in the darkroom. Students will also learn the vocabulary and process of photo criticism. In addition to the cost of the camera, students will incur an expense for materials. For specific costs, please contact the department chair. (4 contact hours: 2 lecture, 2 lab)

PHOT 1105 Basic Photography - Digital **(TAG) 3 Credits**

This course introduces students to the fundamentals of digital photography. Students must supply their own digital single lens reflex (DSLR) cameras with adjustable aperture (f-stop), adjustable shutter speeds, and the ability to shoot raw files. Students will learn the basics of camera exposure and image processing. Students will also learn the vocabulary and process of photo criticism. In addition to the cost of the camera, students will incur an expense for materials. For specific costs, please contact the department chair. (4 contact hours: 2 lecture, 2 lab)

PHOT 1400 Commercial Photography **3 Credits**

Prerequisite: PHOT 1100 or PHOT 1105

This course provides an overview of studio advertising photography. Students will work in the studio using 4x5 view cameras with tungsten and strobe lights, photographing products and still lifes. All assignments simulate jobs done by professional studio photographers. This course helps students prepare a portfolio appropriate for entry level work in the advertising photography industry. (4 contact hours: 2 lecture, 2 lab)

PHOT 1500 Portrait Photography **3 Credits**

Prerequisite: PHOT 1100 or PHOT 1105

This course presents specialized techniques for photographing people on location and in the studio using both strobe and natural light. Students will shoot location work with their own cameras. They will perform studio work with the school's medium-format cameras. The course concentrates on family portraiture, fine art portraiture, and commercial portraiture. (4 contact hours: 2 lecture, 2 lab)

PHOT 1600 Individual Projects in Photography **3 Credits**

Prerequisite: PHOT 1100 or PHOT 1105

Each student in this advanced course is required to submit a proposal during the first week of class for a photo project that reflects the student's interest. When approved, the proposal becomes the focus of the student's work for the entire semester. This course can be used to augment a portfolio in preparation for a job search or to begin a new project that requires an in-depth and extended effort. Students will also present oral reports on research topics throughout the semester. Students may take this course up to three times for credit. (4 contact hours: 2 lecture, 2 lab)

PHOT 1700 Color Photography **3 Credits**

Prerequisite: PHOT 1105

This course covers the use of color photographic materials and additive and subtractive color theory. Students must supply their own Digital SLR cameras with adjustable aperture (f-stop) and shutter speeds and Raw file capability. Students will process color images and make color prints from digital files. The course encompasses photographing, color technology, printing, presentation, aesthetics, and criticism. (4 contact hours: 2 lecture, 2 lab)

PHOT 1750 Historical Black and White Photographic Processes **3 Credits**

Prerequisite: PHOT 1105

This course introduces students to the fundamentals of conventional black and white film-based processing and printing. Students must supply their own film-based cameras with adjustable aperture (f-stop) and shutter speeds. Students will learn how to expose and process film and make prints in the darkroom. The course covers both silver and non-silver historical processes. Students will also learn the vocabulary and process of photo criticism. The cost of materials for this course, not including the cost of a camera, is approximately $150. (4 contact hours: 2 lecture, 2 lab)

PHOT 2100 Forensic Photography **3 Credits**

This course provides students with the fundamental skills of forensic photography as used in police, fire, and insurance investigation. The course emphasizes crime and accident scene documentation. Students will learn how to document and preserve evidence for criminal and civil investigations with both black and white and color materials. Students must provide their own cameras with adjustable shutter speeds and apertures (f-stops). No previous experience in photography is necessary for this course. (4 contact hours: 2 lecture, 2 lab)

PHOT 2200 Surveillance Photography **2 Credits**

This course provides students with the fundamental skills of surveillance photography as used in criminal justice and private security operations. Students will learn how to do covert photography and how to authenticate and document photographs to be admitted into court evidence. Students are required to provide their own cameras with adjustable shutter speeds and apertures (f-stops). No previous experience in photography is necessary for this course. (2.75 contact hours: 1.25 lecture, 1.5 lab)

PHOT 2300 Introduction to Digital Photo Imaging **3 Credits**

This course is an introduction to the theory and methods of electronic image creation, manipulation, storage, and output. Students will use Adobe Photoshop software on the Macintosh computer to create, modify, and output graphic images. The course explains the fundamental principles of image resolution and color space. Students will create graphics files for both print reproduction and computer screen display. (4 contact hours: 2 lecture, 2 lab)

PHOT 2350 Advanced Digital Photo Imaging **3 Credits**

Prerequisite: PHOT 2300

Based on work completed in PHOT 2300 Electronic Imaging I, this intermediate level course explores the more complex functions of Adobe Photoshop software. Students will learn complex image masking and compositing techniques. Students will also learn to prepare graphics files for print reproduction, including the use of color management systems and scanning software and hardware. (4 contact hours: 2 lecture, 2 lab)

PHOT 2600 Panoramic Photography **3 Credits**

This course is an introduction to the theory and methods of production of Quick Time (TM) Virtual Reality images. Students will study and produce both QTVR Panorama and QTVR Object Movies. This course is appropriate for photographers, graphic designers, and others interested in panoramic images. Although neither is a prerequisite for this course, students will benefit from having taken either PHOT 1100 Basic Photography or PHOT 1105 Basic Photography - Digital prior to taking this course. (4 contact hours: 2 lecture, 2 lab)

PHOT 2900 Special Topics in Photography **1-3 Credits**

These specialized courses provide in-depth examinations of photography topics not covered in detail elsewhere in the curriculum.

PHOT 2901 Special Topics in Photography: Travel Photography in France **3 Credits**

Prerequisite: permission of instructor

This course is designed to give students meaningful experience in foreign travel and photography. Participants will return with greater knowledge and appreciation of French history and culture, increased photographic skills and a body of work demonstrating competency in travel photography. Students may take this course up to two times for credit. (4 contact hours: 2 lecture, 2 lab)

PHYSICAL EDUCATION

PEHR 1100 Individual Sports **1 Credit**

These specialized courses provide opportunities for students to learn about and participate in a variety of sports and lifetime activities. (2 contact hours: 2 lab)

PEHR 1101 Aerobic Conditioning
PEHR 1102 Aikido I
PEHR 1103 Aikido II
Prerequisite: PEHR 1102 or permission of instructor
PEHR 1104 Archery
PEHR 1105 Badminton
PEHR 1106 Basketball
PEHR 1107 Bowling
PEHR 1108 Dance-Ballet
PEHR 1109 Dance-Jazz
PEHR 1110 Dance-Modern
PEHR 1111 Golf
PEHR 1112 Karate I
PEHR 1113 Karate II
Prerequisite: PEHR 1112 or permission of instructor
PEHR 1114 Personal Self-Defense
PEHR 1115 Racquetball
PEHR 1116 Softball
PEHR 1117 Tennis
PEHR 1118 Volleyball
PEHR 1119 Fitness Walking/Jogging
PEHR 1120 Volleyball II/Wallyball
Prerequisite: PEHR 1118 or permission of instructor
PEHR 1121 Weight Training and Fitness Conditioning
PEHR 1122 Cardio Kickboxing
PEHR 1123 Stretch and Strength Training
PEHR 1124 Yoga
PEHR 1125 Zumba

PEHR 1200 Sports Appreciation **2 Credits**

This multi-experience course introduces students to sport, recreation, health, and fitness issues. Laboratory experience includes participation in individual and team lifetime sports and fitness activities. (3 contact hours: 1 lecture, 2 lab)

PEHR 1250 First Aid **2 Credits**

This course introduces students to accident or sudden illness recognition and the analysis and correct application of first aid procedures when immediate or temporary care is needed. Laboratory experience includes practice on both mannequins and classmates. Successful completion of lab experience and standardized exam will enable students to achieve American Red Cross certification in Adult CPR and Responding to Emergencies. (2 contact hours)

PEHR 1500 Health and Wellness **1 Credit**

This course introduces students to topical health information emphasizing the six dimensions of health: physical, emotional, environmental, intellectual, social, and spiritual. It also includes the health and skill-related components of fitness, stress management, disease prevention, and prevention of alcohol, tobacco, and drug abuse. The course emphasizes making positive lifestyle choices for optimal health and wellness. (1 contact hour)

PEHR 1550 Introduction to Personal Training **2 Credits**

This course provides an introduction to the personal training profession, including information pertaining to legal issues, program design, assessment, history and future of the profession, and personal qualifications and certification. (2 contact hours)

PEHR 1600 Exercise Physiology I **2 Credits**

This course emphasizes fundamental principles that provide basic and balanced information for the study of exercise physiology for the introductory level student. It examines both the immediate responses to, as well as the long-term benefits of, exercise and how the body responds to the high physiological demands of physical activity. The course covers the essentials of movement, energy for movement, cardio-respiratory function and performance, environmental influences on performance, optimizing performance in sport, age and sex considerations, and physical activity for health and fitness. (3 contact hours: 1 lecture, 2 lab)

PEHR 1650 Health Fitness **2 Credits**

This course introduces students to the development of optimal fitness and wellness lifestyles. The course emphasizes aerobic conditioning, nutrition, body composition, muscle strength and endurance, flexibility, skill-related fitness components, and early detection and prevention of disease, and alcohol, tobacco, and drug abuse. Laboratory experiences assess fitness classifications and participation in regular cardiovascular exercises. (3 contact hours: 1 lecture, 2 lab)

PEHR 1660 Diet and Weight Management Strategies for Sport and Fitness **2 Credits**

This course introduces students to the study of food and the effects on health, physical activity, and performance. It emphasizes dietary intake of vitamins, minerals, protein, fat, carbohydrates, supplements, and water, and how these various components influence energy, body weight, body composition, metabolism rate, and performance, as well as how to incorporate this knowledge into a health-related fitness program for physically active individuals and athletes. (2 contact hours)

PEHR 1670 Instructional Techniques: Strength and Cardio Fitness Training **2 Credits**

This course introduces students to strength and cardio fitness training as a part of total body fitness. The course emphasizes methods of instruction and individualized program development with emphasis on elements of fitness, weight training fundamentals, cardio fitness training, motivation and mental conditioning, muscle identification and function, flexibility, injuries, nutrition, drugs, and equipment use. Laboratory experiences will address methods of instruction, training techniques, proper equipment use, and equipment maintenance. (3 contact hours: 1 lecture, 2 lab)

PEHR 1750 Personal Health **3 Credits**

This course includes topical information that enables students to develop a healthy lifestyle of optimal fitness and wellness. The course emphasizes critical thinking on contemporary health issues and includes discussion of fitness (strength/aerobic), nutrition, stress, relationships, heart disease, chronic and infectious diseases, cancer, smoking, alcohol, drugs, disease prevention, psychological health, parenting, aging, and environmental and safety issues and concerns. (3 contact hours)

PEHR 1800 Recreational Program Planning and Development **3 Credits**

This course introduces the fundamentals of planning and developing a recreational program for a Parks system. Students will gain an understanding of the benefits of leisure activities in today's society. They will also develop an understanding of the importance of community partnerships, the variety of programming areas, volunteerism, and fitness and wellness education. Students will learn about meeting the needs of the specific community they are servicing and gain an understanding of the skills involved in proper budgeting, marketing, and planning and managing a program and personnel to maintain a quality recreational program. The course will provide students with an opportunity to analyze, evaluate, and strategize a creative recreational/leisure program. This course is cross-listed as PARK 1200 Recreational Program Planning and Development and PEHR 1800 Recreational Program Planning and Development. Students who have taken the course under the alternative course ID should not take this course. (3 contact hours)

PEHR 2500 Athletic Training **2 Credits**

This course introduces students to the basic components of a comprehensive athletic training program. It includes a study of injury prevention, recognition, and rehabilitation, as well as the healing process, commonly utilized modalities, and administrative procedures. (2 contact hours)

PEHR 2750 Personal Trainer Internship/Seminar **2 Credits**

Prerequisite: COMM 1100, PEHR 1250, PEHR 1550, PEHR 1670, PEHR 2500, permission of the Physical Education department chair

Students will gain practical experience by working five hours per week for 15 weeks under the direct supervision of a professional personal trainer within an off-campus work setting. The in-class seminar portion of the course will serve as a forum for student discussion of on-the-job experiences and provide students with an overview of the procedural, ethical, and liability issues faced by a personal trainer. In addition, it will help students develop job-seeking skills and provide information pertaining to professional certifications. (6 contact hours: 1 lecture, 5 lab)

PEHR 2800 Methods of Teaching Elementary School Physical Education **3 Credits**

This course introduces students to methods of teaching physical education classes to elementary age children. Students will learn progressive teaching strategies, including theoretical and practical experience in methods, organization, planning, and assessment, with the emphasis on movement education, cooperative, lead-up games, and age-related sports and activities. Laboratory experience includes teaching of individual lessons from student-developed lesson plans. (3 contact hours)

PHYSICAL SCIENCE

PSCI 1100 Conceptual Physical Science **(TM) 4 Credits**

Prerequisite: one year high school algebra or MATH 0850

This is an integrated, interdisciplinary science course intended for students interested in the natural sciences. It emphasizes the understanding of the fundamental physical concepts and theories of our physical world with emphasis on energy formation and utilization. (5 contact hours: 3 lecture, 2 lab)

PSCI 1300 Earth Science **(TM) 3 Credits**

This is an integrated science course intended for students interested in the natural sciences. It emphasizes the understanding of the fundamental concepts of earth science including geology, astronomy, and basic meteorology. (4 contact hours: 2 lecture, 2 lab)

PSCI 1400 Introduction to Meteorology **(TM) 3 Credits**

This is an integrated science course intended for students interested in the natural sciences. It familiarizes students with current facts, theories, and technological methods regarding the study of the weather and climate. Weather prediction and real-time weather data analyses are important parts of this course. (4 contact hours: 2 lecture, 2 lab)

PSCI 1500 Introduction to Ocean Studies **3 Credits**

This introductory course examines the world's oceans from an earth system perspective. Students will be involved in a laboratory of real-world ocean information such as ocean profiler data and land-satellite images. This course covers the physical, chemical, and biological properties of the ocean as well as interactions between the hydrosphere, atmosphere, lithosphere, and biosphere. This lab course is offered in association with the American Meteorological Society and provides a strong transferability component. (4 contact hours: 2 lecture, 2 lab)

PHYSICS

PHYS 1100 Applied Physics I **3 Credits**

Prerequisite: MATH 1001 or higher

This course introduces engineering technology students to the concept of motion, force, momentum, and energy. It emphasizes problem-solving techniques and application of algebra and trigonometry to physical situations. Laboratory work focuses on the correct reading of measuring instruments, the proper handling of measurements in calculations, and testing of physical theories using measured data. (4 contact hours: 2 lecture, 2 lab)

PHYS 1200 Applied Physics II **3 Credits**

Prerequisite: MATH 1001 or higher

This course introduces engineering technology students to concepts of the mechanics of solids, fluid mechanics, heat, thermodynamics, and properties of gases. It emphasizes problem-solving techniques and applications of algebra and trigonometry to physical situations. Laboratory work focuses on the correct reading of measuring instruments, the proper handling of measurements in calculations, and the testing of physical theories using measured data. (4 contact hours: 2 lecture, 2 lab)

PHYS 1440 Physics for Allied Health **3 Credits**

Prerequisite: MATH 0850

This course introduces students to basic concepts in physics using basic mathematics and critical thinking. Topics include measurements, motion, forces, energy, gas laws, fluids and electrical safety. This course is designed for students entering the health technologies, particularly respiratory therapy. (3 contact hours)

PHYS 1500 Astronomy **(TM) 4 Credits**

This introductory astronomy course is intended for students interested in the natural sciences. It introduces the basic concepts of astronomy including the Earth's position in the universe, theories of solar system and universe creation, basic Newtonian physics, light, the solar system components, our sun, telescope use, and galaxies. (4 contact hours)

PHYS 1550 Everyday Physics **(TM) 3 Credits**

Prerequisite: MATH 0850 or one year high school algebra

This course introduces students to basic concepts in physics as they relate to everyday objects and experiences. It uses some basic mathematics to develop topics. Topics include motion, forces, fluids, heat, electricity, and magnetism. This course is designed for non-science majors. (3 contact hours)

PHYS 1610 General Physics I **(TM, TAG) 5 Credits**

Prerequisite: MATH 1650 or permission of instructor

This is the first course in a two-course introductory physics sequence designed for students not majoring in engineering, physics, or chemistry. Topics, which are algebra/trigonometry-based, include vectors, kinematics, Newton's laws, energy, linear and angular momentum, rotational dynamics, fluids and thermodynamics. Students will complete experiments related to these topics in lab. (7 contact hours: 4 lecture, 3 lab)

PHYS 1620 General Physics II **(TM, TAG) 5 Credits**

Prerequisite: PHYS 1610 or permission of instructor

This course is a continuation of PHYS 1610 General Physics I. Topics, which are algebra/trigonometry based, include electrostatics, capacitance, DC series and parallel circuits, electromagnetism, simple AC circuits, mechanical waves, geometric and physical optics, and modern physics. Students will complete experiments related to these topics in lab. (7 contact hours: 4 lecture, 3 lab)

PHYS 2100 Applied Physics III **2 Credits**

Prerequisite: MATH 1001 (can be taken concurrently) or MATH 1101 (can be taken concurrently)

This course introduces engineering technology students to the concepts of electrical physics, electricity and magnetism, basic electric circuits, electric power, basic measuring devices, and generators. It emphasizes problem-solving techniques and applications of algebra and trigonometry to physical situations. Laboratory work focuses on the correct reading of measuring instruments, the proper handling of measurements in calculations, and the testing of physical theories using measured data. (3 contact hours: 1 lecture, 2 lab)

PHYS 2410 Science and Engineering Physics I **(TM, TAG) 5 Credits**

Prerequisite: MATH 2500 or permission of instructor

This is the first course in a two-course physics sequence designed for engineering and science majors. Topics, which are calculus-based, include vectors, kinematics, Newton's laws, energy, linear and angular momentum, rotational dynamics, simple harmonic motion, and thermodynamics. Students will complete experiments related to these topics in lab. (7 contact hours: 4 lecture, 3 lab)

PHYS 2420 Science and Engineering Physics II **(TM, TAG) 5 Credits**

Prerequisite: MATH 2600, PHYS 2410; or permission of instructor

This course is a continuation of PHYS 2410 Science and Engineering Physics I designed for engineering and science majors. Topics, which are calculus-based, include electrostatics, including Gauss's law and electric potential; capacitance; DC circuits; electromagnetism, including the Biot law, Ampere's law, Faraday's law and Lenz's law; mechanical waves; and geometrical and physical optics. Students will complete experiments related to these topics in lab. (7 contact hours: 4 lecture, 3 lab)

PHYS 2900 Special Topics in Physics **1-5 Credits**

These specialized courses provide in-depth examinations of physics topics not covered in detail elsewhere in the curriculum. The courses emphasize the process of scientific investigation as well as the study of specific topics.

POLITICAL SCIENCE

POLS 1300 U.S. National Government **(TM, TAG) 3 Credits**

This course provides an examination of the formation, structure, processes and fundamental political principles of the United States political system, including the development of the Constitution and the federal system, civil rights and liberties, public opinion and political participation, political parties and interest groups, the role of money and the media in the political system, political campaigns and elections, Congress and the legislative process, the presidency, and the federal judiciary. It focuses not only on the achievements of the political system but on its shortcomings as well, thus leading to consideration of the political challenges facing the system and suggestions for reform. (3 contact hours)

POLS 1700 Model UN/Model NATO **1 Credit**

This course is intended to prepare students to participate effectively in Model United Nations (MUN) and Model North Atlantic Treaty Organization (MNATO) conferences. Students will learn about current global issues and the ways in which these important international organizations work to address them. During the semester, students will learn how to research a country's foreign policy positions, develop strategies to address important internal problems, effectively advocate a country's position through application of appropriate debate skills, and develop skills in employing rules of parliamentary procedure, negotiation and compromise, consensus building, and resolution-writing. Throughout the semester, students will participate in Model UN and NATO conferences as well as help organize an MUN/NATO conference at Lakeland. This course is cross-listed as HIST 1700 Model UN/Model NATO and POLS 1700 Model UN/Model NATO. Students who have taken the course under the alternate course ID should not take this course. (1 contact hour)

POLS 2100 State and Local Government **(TM, TAG) 3 Credits**

This course provides a survey of the organization, processes, powers, and responsibilities of state and local government in the United States, with special reference to Ohio. Topics include national-state and state-local relations, state constitutions and municipal charters, political participation, parties and special interests, and the basic institutions of government comprising the legislative, executive, and judicial branches. The course also considers various types of local governments and the problems of metropolitan government. Policy issues examined include education, welfare, and law enforcement policy, as well as budgeting and finance at the state and local levels. Students must conduct a field assignment in their communities. (3 contact hours)

POLS 2200 Introduction to International Relations **(TM, TAG) 3 Credits**

This course examines the origin, nature, and development of the post-Cold War international system. Basic concepts include state, nation, power, sovereignty, nationalism, national interest, security, and balance of power. The course examines the major governmental and nongovernmental, state, and international actors influencing international relations, as well as the primary issues of the modern international system. It also considers strategies for enhancing international security and peace, diplomacy, international trade, nuclear and conventional military power, and international law and government. (3 contact hours)

POLS 2300 Introduction to Comparative Politics **(TM, TAG) 3 Credits**

This course provides an examination and critical analysis of governments and political systems in selected Western and non-Western, developed and developing nations throughout the world. Using a country approach, it introduces the basic concepts, theories and approaches to comparative political analysis. The course gives particular attention to: political cultures, constitutions, governmental institutions and processes, electoral systems, political participation and behavior, political parties and interest groups, the role of political and economic elites, and key current issues and policy-making processes. (3 contact hours)

POLS 2400 Women and Politics **(TM) 3 Credits**

This specialized course studies the changing roles of women in political life in the U.S. and around the world and includes discussion of women candidates, women public officials, and a broad range of women's political groups. It analyzes the political struggles over "women's issues" such as Women's Suffrage, the Equal Rights Amendment, abortion rights, policies on families and children, and economic equity policies. (3 contact hours)

POLS 2500 Modern Political Ideologies **(TM) 3 Credits**

This course provides an introductory survey investigating the origins and basic beliefs of the major political ideologies of the nineteenth and twentieth centuries, including Democracy, Liberalism, Conservatism, Socialism, Fascism, Anarchism and Nationalism. It considers more contemporary belief systems including various liberation ideologies, multiculturalism, and the emergence and rise of religious fundamentalism. The course also considers these ideologies' application in and impact on world affairs today. (3 contact hours)

POLS 2900 Special Topics in Political Science **1-3 Credits**

These specialized courses provide in-depth examinations of political science topics and contemporary issues not covered in detail elsewhere in the curriculum.

PSYCHOLOGY

PSYC 1050 Psychology of Effective Studying **1 Credit**

This introductory course focuses upon skills and the design of materials necessary in the organization for, and the studying of, college-level courses. The course grade will be Satisfactory/Unsatisfactory. (1 contact hour)

PSYC 1400 Human Sexuality **(TM) 3 Credits**

This course introduces students to the biological, cultural, and psychological components of the sexual responses in men and women. Course contents include a focus on attitudes, behaviors, beliefs and myths about human sexuality. Topics include the facts and fictions about sexuality, sexuality research, human anatomy and physiology, sexual responses, gender roles and identity, and deviations, and therapy. (3 contact hours)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

PSYC 1500 Introduction to Psychology **(TM, TAG) 3 Credits**

This course provides a general introduction to the discipline of psychology. It considers most central theories, concepts, findings, and applications in the following areas: biological bases of behavior, the scientific method, learning, perception, thinking, development, memory, individual differences, personality, abnormal behavior, and social behavior. (3 contact hours)

PSYC 1700 Psychology of Gender **(TM) 3 Credits**

This course focuses on the similarities and differences in the psychology of men and women, with emphasis on issues specific to each gender. Students will become familiar with research findings on male and female functioning regarding sex roles, sexuality, stereotypes, achievement, work, mental and physical health, violence and aggression, cognitive functioning, emotions, relationships, school, and harassment. Because of similarities in course content, students who have taken PSYC 1600 Psychology of Women should not take this course. (3 contact hours)

PSYC 1800 Stress and Health **3 Credits**

This course focuses on psychological factors in preventing illness and maintaining good health with emphasis on stress management, prevention, patient care, pain, chronic illness, and health costs. It also addresses specific problem behaviors such as smoking, drinking, dieting, and deficient exercising. (3 contact hours)

PSYC 2100 Lifespan Development for Nursing **(TAG) 3 Credits**

Prerequisite: PSYC 1500

This course introduces students to human development throughout the lifespan. Students will examine personality, social, cognitive, and emotional development from conception to death. The course integrates psychology and nursing curricula. This course is recommended for nursing students only. (3 contact hours)

PSYC 2200 Educational Psychology **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This course is an introduction to the basic psychological principles involved in the processes of teaching and learning. Topics include major theories of human development, learning, motivation, instructional strategies, assessment, and similarities and differences in learners. Additionally, the course examines the influences of environmental variables on learning and development. (3 contact hours)

PSYC 2250 The Psychology of Happiness: Positive Psychology **3 Credits**

Prerequisite: PSYC 1500

This course serves as a scientifically based approach to the understanding of subjective well-being, or "happiness." It examines a wide array of biological, intrapersonal, personality, cognitive, cultural, and other environmental variables that have been found to be related to psychological well-being. Furthermore, students will also explore methods and approaches empirically supported as leading to positive emotional states. (3 contact hours)

PSYC 2300 Personality Theory **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This course specializes in the major theories that describe the structure of personality, the development of the personality, and personality as a predictor of behavior. Students will study the purposes of these theories along with their strengths and their limitations. Students will study a variety of personality theories emphasizing aspects such as internal conflict, social relationships, cognitive, and environmental influences. (3 contact hours)

PSYC 2350 Behavior Modification **3 Credits**

Prerequisite: PSYC 1500 or equivalent

This course will give the student the opportunity to explore and learn about behavioral principles. Students will select an aspect of their own behavior to change in order to illustrate the practical application of behavioral principals. (3 contact hours)

PSYC 2400 Child Psychology **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This introductory course, the first in a series of human development courses, focuses on human growth and development from conception up to, but not including, adolescence. It emphasizes the major theories of development and the normal development sequence. Students will examine the child's social, cognitive, emotional, and physical development, as well as contributing biological and environmental factors. (3 contact hours)

PSYC 2500 Adolescent Psychology **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This introductory course, the second in the series of human development courses, focuses on human growth and development during adolescence. It emphasizes the major theories of development and the normal developmental sequence. Students will examine the adolescent's social, cognitive, emotional and physical development, as well as contributing biological and environmental factors. (3 contact hours)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

PSYC 2600 Adult Development and Aging **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This introductory course, the third in the series of human development courses, focuses on human growth and development during adulthood. It emphasizes the major theories of development and the normal developmental sequence, and includes issues related to death and dying. Students will examine the adult's social, cognitive, emotional, and physical development, as well as contributing biological and environmental factors. (3 contact hours)

PSYC 2700 Introduction to Psychopathology **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This course describes types of psychological disorders and clarifies terms commonly used by the public. It also provides correct definitions of mental/emotional disorders and discusses their causes, symptoms and prognosis. (3 contact hours)

PSYC 2800 Social Psychology **(TM, TAG) 3 Credits**

Prerequisite: PSYC 1500

This course investigates the manner in which the behavior, feelings, or thoughts of an individual are influenced by the behaviors and/or characteristics of others. Topics include stereotypes, prejudice, persuasion, altruism, aggression, conformity, and group processes, as well as the research methodologies involved in studying them. (3 contact hours)

PSYC 2900 Special Topics in Psychology **1-3 Credits**

These specialized courses provide in-depth examinations of topics in human behavior not covered in detail elsewhere in the curriculum. Courses explain aspects of individual functioning and offer specific theories or areas of research. Through these courses students can become familiar with current knowledge about such subjects as stress, health, leadership, creativity, violence/aggression, and discipline.

QUALITY ENGINEERING TECHNOLOGY

QENT 1200 Quality Concepts and Techniques **2 Credits**

Prerequisite: MATH 1101

This course introduces the basic concepts, tools, and techniques of quality control and includes an introduction to the qualitative and quantitative concepts of total quality management (TQM). Students will learn the fundamentals of statistics and probability including measures of central tendency and dispersion, normality, continuous, and discrete probability distributions. They will also study statistical process control (SPC), gage error studies, control charting techniques, and acceptance sampling methods to help determine if a manufacturing process is in control. (3 contact hours: 1 lecture, 2 lab)

RADIOLOGIC TECHNOLOGY

RADT 1100 Introduction to Radiologic Technology **4 Credits**

Prerequisite: admission to Radiologic Technology program

This course introduces students who have been accepted into the Radiologic Technology program to the profession of radiologic technology and its role in healthcare delivery, medical ethics, and medical-legal issues. The course also reviews mathematics for radiographers, fundamentals of radiographic exposure, and basic radiation protection. (5 contact hours: 3 lecture, 2 lab)

RADT 1150 Principles of Imaging I **4 Credits**

Prerequisite: RADT 1100

This course introduces students to principles of radiographic exposure, including primary exposure factors and the proper utilization of accessory devices. It includes discussions on the fundamentals of computed and digital radiography, technique charts, and automatic exposure control. The course concentrates on overall image quality as well as patient exposure. (5 contact hours: 3 lecture, 2 lab)

RADT 1210 Radiographic Procedures I **3 Credits**

Prerequisite: admission to Radiologic Technology program

This course orients students to radiographic procedures. The course examines radiographic positioning and procedures of the chest/thorax, CT chest/thorax, abdomen, upper extremity and shoulder girdle, and lower extremity and pelvic girdle. (5 contact hours: 2 lecture, 3 lab)

RADT 1220 Radiographic Procedures II **3 Credits**

Prerequisite: RADT 1210

This course demonstrates radiographic positioning and procedures of the digestive system; urinary system; spine; bony thorax; skull; and mobile, surgical, and basic brain CT exams. (5 contact hours: 2 lecture, 3 lab)

RADT 1300 Patient Care in Radiography **1 Credit**

Prerequisite: admission to Radiologic Technology program

This course introduces students who have been accepted into the Radiologic Technology program to venipuncture, infection control procedures, patient safety, and assessment techniques used in the care of patients in the radiology department. It also provides an orientation to radiology department functions. (2 contact hours: 0.5 lecture, 1.5 lab)

RADT 1310 Clinical Experience I **1 Credit**

Prerequisite: admission to Radiologic Technology program

This course introduces students who have been accepted into the Radiologic Technology program to the radiology department functions. (4 contact hours: 4 clinical)

RADT 1320 Clinical Experience II **2 Credits**

Prerequisite: RADT 1310

This course is a continuation of RADT 1310 Patient Care and Clinical Experience I providing supervised clinical practice and practical application of radiographic principles, positioning, technique, and patient care with emphasis on abdominal, extremity, and spine radiography. (16 contact hours: 16 clinical)

RADT 2050 Seminar I **1 Credit**

Prerequisite: RADT 1220

This course integrates concepts learned during the first year of radiography training through film, critique sessions, journal assignments, and radiography projects. (1 contact hour)

RADT 2100 Special Imaging Modalities **2 Credits**

Prerequisite: RADT 1220

This course provides students with an overview to the equipment and procedures associated with vascular, neurological, interventional, arthography, and reproductive system examinations. The course covers special imaging modalities such as CT, MR, PET, and mammography. (2 contact hours)

RADT 2150 Radiation Physics **3 Credits**

Prerequisite: RADT 1150

This course introduces students to the basic concepts of physics, electrostatics, electrodynamics, electromagnetics, rectification, x-ray tubes, x-ray circuits, and production and characteristics of radiation used in radiology. (3 contact hours)

RADT 2200 Principles of Imaging II **3 Credits**

Prerequisite: RADT 1150

This course provides the study of specialized imaging modalities and equipment, such as image intensification, tomography, PACS, HIS, RIS, digital printing, and other emerging imaging modalities. It includes discussions of radiographic film/cassette characteristics, automatic processing, and quality assurance for the radiology department. (3 contact hours)

RADT 2280 Radiographic Pathology **2 Credits**

Prerequisite: BIOL 2220, RADT 2100

This course introduces students to the concepts of disease including pathogenesis, clinical manifestations, radiographic appearance, and technical adaptation. (2 contact hours)

RADT 2310 Clinical Experience III **2 Credits**

Prerequisite: RADT 1320

This course is a continuation of RADT 1320 Clinical Experience II providing supervised clinical practice and practical application of radiographic principles, positioning, technique, and patient care; with emphasis on gastrointestinal, biliary, urographic, surgical, portable and emergency/trauma radiography. The course also emphasizes the further development of skills learned in Radiographic Procedures I, II, (RADT 1210, 1220) and in Clinical Experience I, II (RADT 1310, 1320). (18 contact hours: 18 clinical)

RADT 2320 Clinical Experience IV **2 Credits**

Prerequisite: RADT 2310

This course is a continuation of RADT 2310 Clinical Experience III providing supervised clinical practice and practical application of radiographic principles, positioning, technique, and patient care; with emphasis on skull radiography, arthography, myelography, and tomography. (24 contact hours: 24 clinical)

RADT 2330 Clinical Experience V **2 Credits**

Prerequisite: RADT 2320

This course is a continuation of RADT 2320 Clinical Experience IV providing supervised clinical practice and practical application of radiographic principles, positioning, technique, and patient care; with emphasis on advanced imaging modalities including CT, MRI, nuclear medicine, ultrasound, and radiation therapy. (24 contact hours: 24 clinical)

RADT 2340 Clinical Experience VI **2 Credits**

Prerequisite: RADT 2330

This course is a continuation of RADT 2330 Clinical Experience V providing supervised clinical practice and practical application of radiographic principles, positioning, technique, and patient care; with emphasis on refinement of previously-learned skills, and the development of speed and accuracy. Students will complete all required competencies and perform all functions of an entry-level radiographer. (18 contact hours: 18 clinical)

RADT 2410 Radiation Protection and Biology **3 Credits**

Prerequisite: RADT 2150

The course discusses the development of radiobiology, the effects on biological systems, and topics in radiation protection and measurement. (3 contact hours)

RADT 2450 Seminar II **2 Credits**

Prerequisite: RADT 2410

This capstone course integrates all coursework, presented in the two years of training, through preparation for the Registry exam and film critique sessions. The course discusses employment opportunities and job seeking skills. (2 contact hours)

RADT 2500 Mammography for Radiologic Technologists **2 Credits**

Prerequisite: ARRT certification or permission of instructor

This course explores the technical aspects of mammography including optimizing image quality and full-field digital mammography. The course addresses issues relevant to the Mammography Quality Standards Act and helps prepare radiographers for an advanced-level registry exam in mammography. (2 contact hours)

RADT 2600 Introduction to Computed Tomography and Magnetic Resonance Imaging **2 Credits**

Prerequisite: ARRT certification or permission of instructor

The course introduces the radiologic technologist to the fundamental principles and special imaging techniques of computed tomography and magnetic resonance imaging. (2 contact hours)

RADT 2620 Sectional Anatomy and Pathophysiology I **3 Credits**

Prerequisite: BIOL 2220, second year radiography student; or ARRT certification

This course provides a study of human gross anatomy and pathophysiology of the head, neck and thorax in axial, sagittal, and coronal planes; with correlation to computerized tomography (CT) and magnetic resonance imaging (MRI). (3 contact hours)

RADT 2640 Sectional Anatomy and Pathophysiology II **3 Credits**

Prerequisite: BIOL 2220, second year radiography student; or ARRT certification

This course provides a study of human gross anatomy and pathophysiology of the abdomen, pelvis, extremities, and articulations in axial, sagittal, and coronal planes; with correlation to computerized tomography (CT) and magnetic resonance imaging (MRI). (3 contact hours)

RADT 2710 CT Physics and Imaging **2 Credits**

Prerequisite: ARRT certification or permission of instructor

This course is designed to help radiologic technologists develop an understanding of computer fundamentals and physics of CT imaging. (2 contact hours)

RADT 2720 CT Clinical Experience **1-4 Credits**

Prerequisite: ARRT certification, RADT 2600; or permission of instructor

This course, a supervised clinical practice, provides radiologic technologists with the knowledge and skills necessary to perform as a computed tomography technologist. Students may repeat approved CT clinical experiences for credit up to a maximum of 4 credits. (8-32 contact hours: 8-32 clinical)

RADT 2810 MRI Physics and Imaging **3 Credits**

Prerequisite: ARRT certification or permission of instructor

This course is designed to help radiologic technologists develop an understanding of MR imaging methods and MR physics. (3 contact hours)

RADT 2820 MRI Clinical Experience **1-4 Credits**

Prerequisite: ARRT certification, RADT 2600; or permission of instructor

This course, a supervised clinical practice, provides radiologic technologists with the knowledge and skills necessary to perform as a magnetic resonance imaging technologist. Students may repeat approved MRI clinical experiences for credit up to a maximum of 4 credits. (8-32 contact hours: 8-32 clinical)

REAL ESTATE

REST 1100 Real Estate Principles and Practices **3 Credits**

This course provides students with a fundamental understanding of real estate principles and concepts in Ohio. General content areas include real property ownership, licensure, contract law, estate and land interests, title transfers and recording, financing principles and practice, escrow and closing statements, appraisal, brokerage, property development, and land use. Additionally, topical presentations include analysis and discussion of current issues, ethics, federal and state regulations, fair housing, environmental issues, practice tips, professionalism, and investments. This course is required for a State of Ohio license in real estate sales. (3 contact hours)

REST 1200 Real Estate Finance **2 Credits**

This course provides students with a fundamental understanding of important real estate finance concepts and practices in Ohio. General content areas include finance and mortgage lending practices, federal monetary system, laws and regulations, primary and secondary mortgage markets, funding sources, financial instruments and recording, conventional, FHA and VA loans, loan processing, interest calculation, foreclosure, and creative financing. Additionally, topical presentations include analysis and discussion of current issues, ethics, federal and state regulations, financial services and practice, professionalism, and financial calculations. This course is required for a State of Ohio license in real estate sales. (2 contact hours)

REST 1300 Real Estate Law **3 Credits**

This course provides students with a fundamental understanding of important real estate law concepts and practices in Ohio. General content areas include jurisprudence, civil procedure, real and personal property, estates and interests in land, several and joint ownership, deed contracts, finance, foreclosure and liens, closing and title, agency and liability, licensure, fair housing, land control, landlord-tenant law, and estate administration. Additionally, topical presentations include analysis and discussion of current issues, ethics, brokerage and practice, and statutory and case law. This course is required for a State of Ohio license in real estate sales. (3 contact hours)

REST 1400 Real Estate Appraisal **2 Credits**

This course provides students with a fundamental understanding of important appraisal concepts, practices, and methodologies in Ohio. General content areas include the appraisal profession, real property interest, the appraisal process, market conditions, building construction, data collection, site valuation, cost, sales comparison and income capitalization appraisal methodologies, reconciliation, and report preparation. The course also discusses the Uniform Standards of Professional Appraisal Practice. Additionally, topical presentations include analysis and discussion of current issues, ethics, federal and state regulation, practice tips, and professionalism. This course is required for a State of Ohio license in real estate sales. (2 contact hours)

RESPIRATORY THERAPY

RESP 1100 Fundamentals of Respiratory Therapy **3 Credits**

Prerequisite: admission to Respiratory Therapy program

This course introduces students to the field of respiratory care, including the role of the respiratory therapist within the healthcare system. Students will learn to take medical histories, perform physical assessments of the respiratory system, take electrocardiograms, and perform basic bedside nursing skills. The course also discusses oxygen delivery systems and humidification of the airway. (5 contact hours: 2 lecture, 3 lab)

RESP 1200 Cardiopulmonary Physiology **2 Credits**

Prerequisite: admission to Respiratory Therapy program

This comprehensive course provides a detailed analysis of cardiopulmonary physiology, including blood gas analysis and its application to patient care. The course also covers ventilation/perfusion relationships. (2 contact hours)

RESP 1300 Cardiopulmonary Therapeutics **5 Credits**

Prerequisite: RESP 1100, RESP 1200

This course discusses fundamental respiratory therapy procedures and competencies. Students will apply them to simulated case studies, and practice them in the laboratory and clinical facilities under the supervision of a Registered Respiratory Therapist. (12 contact hours: 3 lecture, 3 lab, 6 clinical)

RESP 1400 Pharmacology **1 Credit**

Prerequisite: RESP 1100, RESP 1200

This introductory course covers the pharmacology of the respiratory system, including a review of the autonomic nervous system, dosage calculations, pharmacokinetics, pharmacodynamics, and pharmacotherapeutics. (1 contact hour)

RESP 1500 Cardiopulmonary Pathology **3 Credits**

Prerequisite: RESP 1100, RESP 1200

This course serves as an introduction to respiratory diseases including etiology, pathophysiology, clinical manifestations, treatment, and possible complications. (3 contact hours)

RESP 1600 Advanced Diagnostics **5 Credits**

Prerequisite: RESP 1300, RESP 1400

This advanced course covers diagnostics related to the cardiopulmonary system, including pulmonary function studies and chest x-ray interpretation. Students will apply diagnostics to clinical problem solving. (17 contact hours: 2 lecture, 3 lab, 12 clinical)

RESP 1800 Introduction to Pediatric Respiratory Therapy **2 Credits**

Prerequisite: RESP 1300, RESP 1400

This course introduces the study of embryology, neonatology, and pediatric respiratory care. It also includes a discussion of neonatal and pediatric disease. (2 contact hours)

RESP 2100 Mechanical Ventilation **7 Credits**

Prerequisite: RESP 1500, RESP 1600, RESP 1800

This course serves as an introduction to mechanical ventilation and the acute care setting. Students will discuss and apply the competencies associated with this form of therapy to patient cases. (19 contact hours: 4 lecture, 3 lab, 12 clinical)

RESP 2200 Hemodynamics and Electrocardiography **3 Credits**

Prerequisite: RESP 1500, RESP 1600, RESP 1800

This specialized course provides a study of the cardiovascular system, including invasive and non-invasive evaluation, pharmacology related to this system, and its application to patient care. (3 contact hours)

RESP 2300 Long Term Care and Rehabilitation **6 Credits**

Prerequisite: RESP 2100, RESP 2200

This specialized course applies respiratory care to long-term care and rehabilitation. The course discusses the role of the therapist outside the acute care setting. Students will apply current standards of practice to patient care. (18 contact hours: 3 lecture, 3 lab, 12 clinical)

RESP 2400 Advanced Therapeutics **3 Credits**

Prerequisite: RESP 2100, RESP 2200

This advanced course evaluates the application of research to respiratory care and the therapist's role. The course also includes classroom discussion of the economics and legal aspects of healthcare affecting the practice of respiratory care. (3 contact hours)

RESP 2900 Special Topics in Respiratory Care **1-3 Credits**

These specialized courses provide current or soon-to-be practitioners with in-depth examinations of respiratory care topics not covered in detail elsewhere in the curriculum. The courses provide students with opportunities to study and acquire skills beyond entry level.

RESP 2901 Special Topics in Respiratory Care: Pulmonary Function - Entry Level **2 Credits**

Prerequisite: Current healthcare provider or permission of the instructor

This course is designed to cover the knowledge base needed for a certified pulmonary function technician (CPFT) as defined by the National Board for Respiratory Care (NBRC). It introduces the learner to pulmonary function tests, including their indications, administration techniques, quality measures, criteria for acceptability of results, and interpretation. The course includes National standards for testing as presented in the Clinical Practice Guidelines (CPG) from the American Association for Respiratory Care (AARC). It uses case studies to assist the learner in applying and interpreting the tests and results. It also explains and applies calculations for various tests, where appropriate. (2 contact hours)

SLOVENIAN

SLOV 1001 Elementary Slovenian I **4 Credits**

This introductory course presents the basics of Slovene grammar, vocabulary and culture and provides the student with an opportunity to practice and learn the language communicatively through simulation of real life situations. (4 contact hours)

SLOV 1002 Elementary Slovenian II **4 Credits**

Prerequisite: SLOV 1001 or permission of instructor

This course is a continuation of SLOV 1001 Elementary Slovenian I. It continues the overview of basic Slovenian grammar, vocabulary, and culture. Students will learn to understand a range of simple spoken and written texts and to carry out a variety of communicative functions (praising, inviting, addressing, promising, etc.). Communication is mainly confined to understanding and forming simple texts and simple dialogues. From authentic or shortened Slovene texts, students will acquire basic information about Slovene culture, politics, society, and current events in the area of arts and literature. (4 contact hours)

SLOV 2001 Intermediate Slovenian I **3 Credits**

Prerequisite: SLOV 1002 or permission of instructor

This intermediate course continues the study of Slovenian grammar, vocabulary and culture, and provides the students with the opportunity to practice and learn the language communicatively, through simulation of real life situations. (3 contact hours)

SLOV 2002 Intermediate Slovenian II **3 Credits**

Prerequisite: SLOV 2001 or permission of instructor

This intermediate course continues the study of Slovenian grammar, vocabulary and culture, and provides the students with the opportunity to practice and learn the language communicatively, through simulation of real life situations. (3 contact hours)

SOCIOLOGY

SOCY 1150 Principles of Sociology **(TM, TAG) 3 Credits**

This survey course introduces students to the basic concepts, theories, perspectives, and processes in sociology. Students will learn the basic organization of the discipline and the fundamental research processes used to create it. Because of similarities in course content, students who have taken SOSC 1100 Social Science I, SOSC 1200 Social Science II, or SOSC 1300 Social Science III should not take this course. (3 contact hours)

SOCY 1190 Chemical Dependency and Society **(TM) 3 Credits**

This course provides a survey of the cultural and historical perspectives regarding drug use, drug abuse, and the impact of drugs on society and the individual. Students will learn sociological, psychological, pharmacological, and legal aspects of drug usage. Students will study the causes of drug dependency, treatment alternatives, and the greater consequences of drug usage for our social institutions. (3 contact hours)

SOCY 2000 Ethnic Minorities in the U.S. **(TM, TAG) 3 Credits**

This course provides an interdisciplinary study of the ethnic minorities of America, focusing on the cultural history of ethnic minorities present in Northeastern Ohio. It presents modes of accommodation, acculturation, and assimilation typical of ethnic groups in American society. (3 contact hours)

SOCY 2250 Introduction to Social Work **(TM, TAG) 3 Credits**

Prerequisite: SOCY 1150

This course introduces students to the practice, theory, and history of social work. Students will learn the various settings, roles, and functions of the discipline. The course includes content ranging from social welfare policy to direct practice with individuals, families, and groups. (3 contact hours)

SOCY 2260 Sociology of the Family **(TM, TAG) 3 Credits**

Prerequisite: SOCY 1150

This introductory course provides an analysis of the family as a social institution, both historically and in contemporary society. The course will focus on patterns of relationships with families, with other social institutions, social class and ethnic variations, and social change. (3 contact hours)

SOCY 2270 Sociology of Aging **(TM) 3 Credits**

Prerequisite: SOCY 1150

This course provides an analysis of the "graying of America" and how this demographic transition affects the institutions of society (e.g., family, government, the economy, health delivery systems, etc.) In addition, it analyzes the effect that social institutions have on the process of aging. (3 contact hours)

SOCY 2280 Social Problems **(TM, TAG) 3 Credits**

Prerequisite: SOCY 1150

This course provides an overview of contemporary social problems in the United States. Students will explore the nature of these problems, how they developed, and potential solutions. Students will also learn methods of sociological analysis. (3 contact hours)

SOCY 2290 Deviance in American Society **(TM) 3 Credits**

Prerequisite: CRMJ 1110 or SOCY 1150

This course provides a survey of the cultural and historical experiences and perceptions of social deviance in U.S. society. This involves exploring the social processes through which behaviors and statuses come to be defined as deviant, the theories of deviant behavior and labels, the methods of studying deviance, and the patterns of social controls practiced to address deviant behavior. (3 contact hours)

SOCY 2900 Special Topics in Sociology **1-3 Credits**

Prerequisite: SOCY 1150 or SOSC 1100

These specialized courses provide in-depth examinations of sociology topics and contemporary issues not covered in detail elsewhere in the curriculum.

SPANISH

SPAN 1001 Elementary Spanish I **4 Credits**

This course is the first in the two-course Elementary Spanish sequence. It introduces the study of functional Spanish, with emphasis on speaking, writing, and understanding oral and written Spanish in basic and simple situations and texts. Students will be able to greet, introduce, and describe people; talk about themselves, their families, jobs, houses, and daily activities; express likes and dislikes; discuss daily activities, incorporating reflexive verbs, travel and clothing; fill out a job application; understand and give basic instructions using commands; and write and read basic texts and tell stories in the present, preterit, and imperfect tenses. The course includes intensive listening comprehension training through the use of audiovisual and multimedia materials and discussion of cultural topics. (4 contact hours)

SPAN 1002 Elementary Spanish II **4 Credits**

Prerequisite: SPAN 1001 or permission of instructor

This course is the second in the two-course Elementary Spanish sequence. It includes an introduction to the subjunctive mood; the future, conditional, and perfect tenses; relative pronouns; certain prepositions, conjunctions, and adverbs; and negative expressions. Communicative situations include the expression of emotion, doubt, disbelief, denial, possibility, advice and suggestion; and the narration of events in the past, present, and future. The course continues intensive listening comprehension training and cultural discussion. (4 contact hours)

SPAN 2001 Intermediate Spanish I: Conversation and Grammar **3 Credits**

Prerequisite: SPAN 1002 or permission of instructor

In this intermediate level course students will engage in an intensive review of Spanish grammar through usage and conversation. Listening comprehension and oral production are the linguistic skills at the core of the course. The course also addresses problems of lexical usage and idiomatic expressions. This course is taught in Spanish. (3 contact hours)

SPAN 2002 Intermediate Spanish II: Culture and Civilization **3 Credits**

Prerequisite: SPAN 2001 or permission of instructor

This intermediate level course concentrates on the study of the cultural variety of the Spanish speaking world through the reading and analysis of a variety of texts: journalism, literature, art, folklore, film, documentaries, and advertising. It also introduces a more academic and technical vocabulary that complements the functional-communicative one typical of previous courses. This course is taught in Spanish. Because of similarities in course content, students taking this course should not take IDST 2400 Culture and Civilization of the Spanish Speaking World. (3 contact hours)

SPAN 2003 Spanish Composition and Grammar **3 Credits**

Prerequisite: SPAN 2001 or permission of instructor

This course is intended to increase grammar competence and develop student's abilities in composition tasks that reflect the kind of writing generally required of Spanish majors and minors. The topics, activities, and exercises included in this course will help students to expand and refine a number of writing tools - control of grammar, range of vocabulary, rhetorical techniques for organizing information - as well as strategies for getting started, characterizing the reader, reading critically, peer editing, revising, and rewriting. This course is taught in Spanish. (3 contact hours)

SPEECH

(See Communication Studies)

SURGICAL TECHNOLOGY

SURG 1100 Surgical Technology I **5 Credits**

Prerequisite: admission to Surgical Technology program

This course introduces the concepts and foundations of surgical technology including the standard of care, regulatory issues, and legal aspects of working as a surgical technologist. Students will learn aseptic and sterile techniques, the use and care of basic surgical instrumentation, and the relationship of the surgical technologist's role in the intraoperative environment. (9 contact hours: 3 lecture, 6 lab)

SURG 1300 Surgical Technology II **7 Credits**

Prerequisite: SURG 1100 or permission of instructor

This course presents the role of the surgical technologist in the intraoperative setting. This course emphasizes surgery-specific anatomy and physiology of the tissue planes of the human body, surgical site management, hemostasis, electrosurgery, lasers, endoscopy, anesthesia techniques, and introduction to surgical pharmacology. Students will apply knowledge and skills in a clinical environment. (15 contact hours: 4 lecture, 3 lab, 8 clinical)

SURG 1500 Surgical Pharmacology **2 Credits**

Prerequisite: admission to the Surgical Technology program or NURS 2750 or permission of instructor

This course prepares the sterile and the unsterile surgical team members to safely prepare, handle, administer, and monitor pharmacologic agents in the sterile environment. (2 contact hours)

SURG 2100 Surgical Technology III **5 Credits**

Prerequisite: SURG 1300 or permission of instructor

This course presents intermediate level participation in the operating room as a student surgical technologist. Students will learn to manage infection control issues including equipment and instrument decontamination, disinfection, and sterilization. Students will learn to take and report patient vital signs and help the team manage intraoperative complications. (11 contact hours: 3 lecture, 8 clinical)

SURG 2300 Surgical Technology IV **7 Credits**

Prerequisite: BIOL 2220, SURG 2100; or permission of instructor

This course presents a continuation of patient care in the intraoperative setting as performed by the intermediate- to advanced-level surgical technologist. The student will scrub independently with minimal assistance from a preceptor for surgical procedures of the following organs and body systems: breast, plastics, head and neck, ophthalmic, nonorthopaedic upper and lower extremities, endovascular, genitourinary, gynecologic, and gastrointestinal. (20 contact hours: 4 lecture, 16 clinical)

SURG 2500 Surgical Technology V **7 Credits**

Prerequisite: SURG 2300 or permission of instructor

This course presents a continuation of patient care in the intraoperative setting as performed by the advanced level student surgical technologist. This course prepares the student to perform in the position of first scrub surgical technologist in procurement/transplants, neurologic, orthopaedic, spine, cardiac, and vascular procedures. The course will also discuss age-specific patient populations. Students will apply skills learned in a clinical environment. Students will sit for the national certification examination through the National Board for Surgical Technology and Surgical Assisting (NBSTSA). (20 contact hours: 4 lecture, 16 clinical)

SURG 2600 Surgical Technology Seminar **1 Credit**

Prerequisite: permission of instructor

This course introduces topics of postgraduation professional and employment interest to surgical technologists, including selected management activities, role as first assistant in surgery, certification exam review planning, time management, resume writing, and job interviewing. (1 contact hour)

THEATRE

THEA 1050 Introduction to Theatre **3 Credits**

This course examines theatre as a unique art form as well as an industry and academic discipline. In addition to placing theatre in a societal context, this nonperformance course will engage students in an exploration of all aspects of theatre including acting, directing, playwrighting, management, history and criticism, production, the audience, and for- and not-for-profit theatre. (3 contact hours)

THEA 1200 Acting I **(TAG) 3 Credits**

This course explores the basic concepts and techniques of acting (including method and nonmethod), the development of skills in improvisation, warmups, body movement, vocal production, basic character development, and basic scene study. The course will also provide students with experience in performance situations. (4 contact hours: 2 lecture, 2 lab)

THEA 1300 Script Analysis **3 Credits**

Prerequisite: THEA 1050 or 1200

This course provides practical experience in the creation of a character based upon the exploration of a written script. Students will discover creative and in-depth techniques of script analysis and different methods for researching the script. (4 contact hours: 2 lecture, 2 lab)

THEA 1800 Introduction to Stagecraft: Set Construction **(TAG) 3 Credits**

This course introduces actors and non-actors to the theory and practice of planning, construction, maintaining, and decorating stage scenery. Topics include scenic materials, construction techniques, and stock scenic units, working drawing tools, stage hardware, and scene painting techniques. Instruction involves demonstrations, student projects, and hands-on experiences. (4 contact hours: 2 lecture, 2 lab)

THEA 1850 Introduction to Stagecraft: Lighting and Sound **3 Credits**

This course introduces actors and non-actors to the theory and practice of electricity, light, and sound as they apply to theatrical performances. Topics include light and sound design, lighting instruments, color filters, control equipment, sound reinforcement, and microphones. Instruction includes lectures, demonstrations, student projects, and hands-on experiences. (4 contact hours: 2 lecture, 2 lab)

THEA 2200 Civic Theatre **1 Credit**

This introductory course provides students with hands-on experience in theatre rehearsal and performance. Students will train as actors or production crewmembers. Actors must take part in auditions, which are held the first week of class of each semester. Performance dates occur during the middle of the semester. Students may take this course up to four times for credit. (3 contact hours: 3 lab)

THEA 2800 Theatre and Performing Arts Co-Op Experience **1-3 Credits**

Prerequisite: completion of at least 10 credits, concurrent enrollment in at least one other course, minimum 2.0 GPA, approval of experiential education coordinator

Cooperative education is a planned, paid work activity relating to students' interests or occupational objectives in the fields of art or theatre. The supervisor at the designated studio or theatre coordinates the experience, and appropriate departmental faculty monitors students' progress. Under state guidelines, students may register for 1 credit for each unit of 180 hours of employment during the semester. Students may repeat this course until they accumulate 9 credits. NOTE: Students may apply a maximum of 9 credits in cooperative work experience, or in any combination of cooperative work experience, field experience, and/or practicum to an associate degree program.

URBAN STUDIES

URST 2000 Introduction to Urban Studies **(TM) 3 Credits**

This specialized course integrates current information from the disciplines of social science to explain the phenomenon of urban growth. Students will examine the myth and reality of life in the megalopolis. (3 contact hours)

URST 2100 Contemporary Urban Issues **3 Credits**

This course explores current challenges facing cities and potential solutions. Topics examined include the provision of social and physical services, housing, employment, the educational system, and national and international demographic changes. Throughout the course, students will examine the unique challenges faced by underrepresented populations and minority groups. (3 contact hours)

WELDING

WELD 1020 Weld Shop Fundamentals **6 Credits**

This course provides instruction and laboratory work to gain knowledge and skills related to welding. It does not provide hands-on welding experience. Topics include blueprint reading and sketching, machining, metalworking principles and techniques, basic metallurgy, and fixturing. It also presents basic concepts of electricity and how this relates to welding. Students must provide a scientific calculator and safety glasses for this course. The recommended type is the TI-30X IIS or similar calculator. (8 contact hours: 4 lecture, 4 lab)

WELD 1220 Oxyfuel Gas Welding **2 Credits**

This course introduces students to oxy-acetylene welding, braze welding, silver brazing, oxy-acetylene hand cutting, and oxy-propane machine cutting. Laboratory experience includes the oxy-acetylene welding of low carbon steels; bronze braze welding of low carbon steel; silver brazing of low carbon steel, stainless steel, and copper tubing; the testing of welds produced; and manual oxy-acetylene and straight line oxy-propane machine cutting of low carbon steel as well as carbon arc gouging. Laboratory experience includes an emphasis on individual instruction. Students must provide safety glasses, gloves, protective clothing, and goggles/helmet for use in the laboratory. (4 contact hours: 1 lecture, 3 lab)

TM = Transfer Module course • TAG or CTAG = TAG or CTAG course

WELD 1240 Stick Welding **2 Credits**

This course introduces students to shielded metal-arc welding. Laboratory experience develops the skill to produce quality welds and includes functions and specific uses of manual-welding equipment, various "stick" welding techniques, special metals handling, and welding certification requirements. Students must provide safety glasses, gloves, protective clothing, and goggles/helmet for use in the laboratory. (4 contact hours: 1 lecture, 3 lab)

WELD 1255 FCAW and GMAW (MIG/MAG) Welding **3 Credits**

This course introduces students to the basic concepts of design and production of many types of weldments used in industry, with emphasis on proper design, set-up, and techniques to produce a cost effective weldment. Topics include gas metal arc welding and flux-cored arc welding. Laboratory experience includes skill development in both types of arc welding. Students must furnish safety glasses, gloves, protective clothing, and helmet for use in the laboratory. (4 contact hours: 2 lecture, 2 lab)

WELD 1265 GTAW (TIG) Welding **3 Credits**

This course introduces students to the basic concepts of design and production of many types of weldments used in industry, with emphasis on proper design, set-up, and techniques to produce a cost effective weldment using the gas tungsten arc welding (GTAW) or (TIG) process. Laboratory experience includes skill development in MIG, TIG, flux-cored and submerged arc welding. Students must furnish safety glasses, gloves, protective clothing, and helmet for use in the laboratory. (4 contact hours: 2 lecture, 2 lab)

WELD 1810 AWS D1.1 - 3G 7018 Certification Preparation **1 Credit**

Prerequisite: WELD 1240 or successful completion of Comprehensive Lincoln Electric Welding Program or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 3G 7018 certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1820 AWS D1.1 - 3G GMAW-P Certification Preparation **1 Credit**

Prerequisite: WELD 1255 or successful completion of Comprehensive Lincoln Electric Welding Program or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 3G GMAW-P certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1830 AWS D1.1 - 3G FCAW-G Certification Preparation **1 Credit**

Prerequisite: WELD 1255 or successful completion of Comprehensive Lincoln Electric Welding Program or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 3G FCAW-G certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1840 AWS D1.1 - 3G FCAW-S Certification Preparation **1 Credit**

Prerequisite: WELD 1255 or successful completion of Comprehensive Lincoln Electric Welding Program or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 3G FCAW-S certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1850 AWS D1.1 - GTAW MS 3F Certification Preparation **1 Credit**

Prerequisite: WELD 1265 or successful completion of Comprehensive Lincoln Electric Welding Program or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1- GTAW MS 3F certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1855 AWS D1.2 - GTAW AL 3F Certification Preparation **1 Credit**

Prerequisite: WELD 1850 or AWS D1.1 GTAW MS 3F Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.2 - GTAW AL 3F certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1860 AWS D1.6 - GTAW SS 3F Certification Preparation **1 Credit**

Prerequisite: WELD 1850 or AWS D1.1 GTAW MS 3F Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.6 - GTAW SS 3F certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1865 AWS D1.1 - 4G 7018 Certification Preparation **1 Credit**

Prerequisite: WELD 1810 or AWS D1.1 - 3G 7018 Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 4G 7018 certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1870 AWS D1.1 - 4G GMAW-P Certification Preparation **1 Credit**

Prerequisite: WELD 1820 or AWS D1.1 - 3G GMAW-P Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 4G GMAW-P certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1875 AWS D1.1 - 4G FCAW-G Certification Preparation **1 Credit**

Prerequisite: WELD 1830 or AWS D1.1 - 3G FCAW-G Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 4G FCAW-G certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 1880 AWS D1.1 - 4G FCAW-S Certification Preparation **1 Credit**

Prerequisite: WELD 1840 or AWS D1.1 - 3G FCAW-S Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for AWS D1.1 - 4G FCAW-S certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 2010 Pipe Welding **3 Credits**

Prerequisite: WELD 1240 or WELD 1810 or AWS D1.1 - 3G 7018 Certification or WELD 1865 or AWS D1.1 - 4G 7018 Certification or graduation from Lincoln Electric's Basic Plate and Sheet Metal course or Pipe Welding course

This course introduces students to the ASME and API pipe welding standards. Students will choose one of these two standards to develop their welding skills and possible certification in the laboratory. Laboratory sessions will provide hands-on time to develop skills to produce quality welds on flat plate and then on pipe. The course covers functions and specific uses of manual-welding equipment, various "stick" welding techniques, prepping and fitting of pipe coupons, and welding certification requirements. The student must provide safety glasses, welding hood, gloves, welding jacket, and long pants for use during the laboratory. (5 contact hours: 1 lecture, 4 lab)

WELD 2020 ASME - 6G 6010 root 7018 out SMAW Certification Preparation **1 Credit**

Prerequisite: WELD 1865 or AWS D1.1 - 4G 7018 Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for ASME - 6G 6010 root 7018 out SMAW certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

WELD 2025 API 1104 Certification Preparation **1 Credit**

Prerequisite: WELD 1865 or AWS D1.1 - 4G 7018 Certification or permission of instructor

This course is designed for the sole purpose of preparing experienced welders for API 1104 certification. Students must produce an acceptable weld and become certified for successful completion of the course. Course tuition does not include the costs related to acquiring certification. Students who have current and verifiable certification can receive credit by certification for this course. (1.5 contact hours: 0.5 lecture, 1 lab)

Faculty, Advisory Committees and Administration

Faculty
Advisory Committees
Administration
Supervisory and Professional Staff
Board of Trustees
The Lakeland Foundation

Lakeland
COMMUNITY COLLEGE

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M.Ed. University of Akron

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B.S. The Ohio State University
M.A. The Ohio State University

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A.S. Allegheny County Community College
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M.S. Cleveland State University

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M.A. Michigan State University

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M.S. Cleveland State University

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M.S. Georgia Institute of Technology

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M.F.A. University of North Dakota

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M.A. California State University

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M.A. John Carroll University

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Occupational education in the community college is concerned with the ever-changing employment scene. Educators must provide skills that are salable and they must keep in constant communication with representatives of the world of work. One significant way to do this involves use of advisory committees. The men and women whose names appear below volunteer their time, talent and experience. Representing the spectrum of employers and their professions, they perform the vital role of placing business and industry at the side of educational planners where they can guard against program obsolescence and help interpret manpower demands.

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