COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AASD104	Arts & Sciences-Devel Learning	1 to 6	This course provides students the opportunity to acquire, develop, and demonstrate skills in select areas of development/transitional learning, leading to improved competencies in reading, writing, mathematics, or other literacies. Topics are identified and defined on a specific section syllabus and may vary with each semester and section offering. (F, Sp, Su) Prerequisite: Reading level 2 and Writing level 2 Recommended: THEA 110 with Department Approval or a course for student's program of study. Consult an Academic Advisor to identify appropriate concurrent courses.
AASD105	Arts & Sciences-Devel Learning	1 to 6	This course provides students the opportunity to acquire, develop and demonstrate skills in select areas of developmental/transitional learning leading to improved competencies in reading, writing, mathematics, or other literacies. Topics are identifed and defined on a specific section syllabus and may vary with each semester and section offering. (F,Sp,Su) Prerequisite: Reading level 4 and Writing level 4 and ENGL 121 concurrently.
AASD110	Arts & Sciences-Devel Learning	1 to 6	This course provides students the opportunity to acquire, develop and demonstrate skills in select areas of developmental/transitional learning leading to improved competencies in reading, wiritng, mathematics, or other literacies. Topics are identified and defined on a specific section syllabus and may vary with each semester and section offering. (F,Sp,Su) Prerequisite: Determined by Section
AAST285	Arts & Sciences Special Topics	1 to 4	This course provides students the opportunity to acquire knowledge and skills in various Arts and Sciences topcis. Topics may include a Study Abroad experience in a particular discipline, multidisciplinary or honors seminars, or subjects of general interest to the community and may vary with each semester and section offering.(F,Sp,Su) Prerequisite: Determined by Section
AAST290	Arts & Sciences Special Topics	1 to 6	This course provides students the opportunity to acquire knowledge and skills in various Arts and Sciences topics. Topics may include a Study Abroad experience in a particular discipline, multidisciplinary or honors seminars, or subjects of general interest to the community and may vary with each semester and section offering. (F,Sp,Su) Prerequisite: Determined by Section
ACAD100	First Year College Experience	1	First Year Experience introduces students to college and the skills they will need for success in college. Students will learn and apply strategies for adjusting to college and improving class performance. Topics include academic and self-management issues, such as campus resources, study techniques, diversity, communication, critical thinking and problem solving, career planning, time management, goal-setting, finances and stress-management. (F,Sp,Su) Prerequisite Course: None Placement Score: Reading Level 5 or concurrent enrollment in (NCEL 101 or NCSS 101 or ENGL 098 or ENGL 099 or ESOL 098 or ESOL 099)
ACAD101	First Year Experience	3	First Year Experience is designed to act as an academic, cultural, and social transition to Lansing Community College. Students will learn strategies for adjusting to college and improving classroom performance. The class will use a standardized freshman assessment to examine students' perceptions of college and develop appropriate academic skills. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG100	Practical Accounting Non-Major	3	Students will learn the bookkeeping procedures necessary for preparation of financial statements and payroll. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG101	Accounting Info for Management	3	Students will learn to interpret financial statements and use this information for analysis, budgeting, and decision-making. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG102	Special Topics in Accounting	1 to 4	This course explores current issues, knowledge, and skills relevant to the accounting profession. Specific topics vary by semester. Check the semester schedule book. (Sp) Prerequisite: Determined by Section Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ACCG160	Payroll Systems and Taxes	2	This course covers laws affecting payroll, calculation of payroll and payroll taxes using both manual and computer payroll systems, preparation of tax forms for payroll taxes, sales and use taxes, and personal property taxes. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Math Level 4 Recommended: ACCG 100 or equivalent work experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG161	Accounting with Quickbooks	2	Students will have hands-on experience in setting up an accounting system for a new or existing company using the QuickBooks general ledger accounting software. Students also will learn how to perform numerous types of accounting procedures using QuickBooks. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 4 and Math Level 4 Recommended: ACCG 100 or equivalent coursework or equivalent work experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG210	Principles of Financial Accg	4	This course introduces the basic concepts of financial accounting, including the processing and reporting of business transactions throughout the accounting cycle of service and merchandising businesses. The course includes the preparation and analysis of the financial statements, including accounting for cash, internal controls, inventories, receivables, plant assets, current liabilities, long-term liabilities, bonds, equity, statement of cash flows, as well as financial statement analysis. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Math Level 4 Course Notes: 1) Textbooks for this course are included in the course fee. Access to the textbooks will be given on the first day of class. 2) Students taking this course intending to transfer to MSU must also complete ACCG 102, Principles Supplement (Spring semester), or ACCG 211. 3) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG211	Principles of Managerial Accg	4	This course emphasizes developing an understanding of cost and managerial accounting. Students will learn how to use managerial accounting tools for analysis, reporting, and facilitating decision-making. They will also learn about product costing, budgeting, and cost control methods. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in ACCG 210 Placement Scores: Reading Level 5 and Math Level 4 Recommended: Intermediate Algebra or higher Course Notes: 1) Textbooks for this course are included in the course fee. Access to the textbooks will be given on the first day of class. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG220	Intermediate Accounting I	4	Intermediate Accounting I is the first in a two-course sequence focusing on financial accounting and reporting, especially for publicly-traded corporations. Topics include the environment of financial accounting, accounting theory, financial statement preparation, time value of money concepts, and specific issues in accounting for current and long-term assets. (F,Sp) Prerequisite Courses: Minimum 2.0 in ACCG 211 Placement Scores: Reading Level 5 Recommended: Electronic spreadsheet experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG221	Intermediate Accounting II	4	Intermediate Accounting II is the second in a two-course sequence, focusing on financial accounting and reporting, especially for publicly-traded corporations. Topics include accounting for investments, liabilities, and shareholders' equity. In addition, the statement of cash flows and accounting changes and error correction are reviewed in depth. (F,Sp) Prerequisite Course: Minimum 2.0 in ACCG 220 Placement Scores: Reading Level 5 Recommended: Electronic spreadsheet experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ACCG230	Cost/Managerial I	4	This course focuses on accounting for manufacturing; cost-volume-profit analysis, responsibility accounting, decision models, activity based costing and activity based management. Other topics include: Just-In-Time inventory, absorption vs. variable costing, role-responsibility and professional ethics of the accountant. Computer applications are emphasized. (F,Sp) Prerequisite Courses: Minimum 2.0 in ACCG 211 Placement Scores: Reading Level 5 Recommended: Electronic spreadsheet experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG240	Federal Income Tax I	4	This class is the first in a two-semester sequence in federal income tax. This course deals with taxation of individuals from a historical and theoretical perspective, as well as preparation of individual income tax returns under current tax law. (F,Sp, Su) Prerequisite Course: Minimum 2.0 in ACCG 210 Placement Scores: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.
ACCG241	Federal Income Tax II	4	This class is the second in a two-semester sequence in federal income tax. This course deals with the taxation of corporations, s-corporations, LLC's, partnerships, estates, and trusts from a historical and theoretical perspective, and as well as preparation of tax and information returns under current tax law. (F,Sp) Prerequisite Courses: Minimum 2.0 in ACCG 240 Placement Scores: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG245	Accounting Internship	2	This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 128 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, accounting related, and provide an appropriate learning situation. (F,Sp,Su) Prerequisite Course: None. Department Approval is required. Placement Scores: None Recommended: Minimum of 8 upper level ACCG credits
ACCG250	Advanced Accounting	2	This course covers business consolidations, foreign currency accounting, and International Financial Reporting Standards (IFRS) as tested on teh CPA Exam. (F) Prerequisite: Minimum 2.0 in ACCG 221 and Reading Level 5
ACCG260	Accounting Systems	4	Accounting Systems prepares students to work with and design information systems. Students analyze systems, work with computerized accounting systems, database design, and problem solving with spreadsheets. (F,Sp) Prerequisite Courses: Minimum 2.0 in ACCG 211 Placement Scores: Reading Level 5 Recommended: Keyboarding experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG266	Independent Study Accounting	1 to 4	With this course, students will learn accounting topics currently not included in existing courses. It is expected that the student will spend approximately 48 hours per credit. (F,Sp,Su) Prerequisite: Department Approval
ACCG271	Principles of Finance	3	This course emphasizes the short- and long-term decisions a financial manager may face. Topics include working capital management, risk, cost of capital, capital markets, long-term debt, stocks and dividend policy, mergers and acquisitions, and international financial markets as these topics relate to obtaining financing for a business. (Sp,Su) Prerequisite Course: Minimum 2.0 in ACCG 211 Placement Scores: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ACCG280	Governmental Accounting	2	Applications of fund accounting principles are applied to governmental (local and state) and not-for-profit entities. Students learn skills necessary to understand the organization, accounting functions, auditing, and financial reporting practices of governmental and non profit organizations. Governmental Accounting Standards Board (GASB) and Financial Accounting Standards Board (FASB) requirements are taught. (Sp) Prerequisite: Minimum 2.0 in ACCG 211 and Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG290	Auditing	4	Students will primarily learn about the audit of historical financial statements as performed by certified public accounting firms. Material covered on the CPA exam will be emphasized. (F, Sp) Prerequisite Courses: Minimum 2.0 in ACCG 221 or concurrently Placement Scores: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ACCG292	Fraud Detection and Prevention	3	Fraud examination will cover the principles and methodology of fraud detection and deterrents. The course will include the how and why of fraud, recognizing symptoms and positive detection methods, fundamentals of conducting a fraud investigation, fraud in the management ranks, and methods of resolution. (Sp) Prerequisite: Minimum 2.0 in ACCG 211 or concurrently and Reading Level 5 and Writing Level 4
AEET120	Residential Energy	3	The focus of this course will be on the history of traditional energy sources and reasons why government, business, and industry are turning to alternative and renewable energy sources. Topics include how to reduce fossil fuel usage and how to convert from traditional energy sources to alternative and renewable energy sources. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
AEET175	Special Topics/Altern Energy	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Alternative Energy Engineering Technology and other related topics. Specific content may vary with each offering and will be related to the Alternative Energy Engineering Technology Program and profession. (F,Sp,Su) Prerequisite: Determined by Section
AEET216	Solar Energy Technologies	3	This course will cover the basics of solar energy generation including energy collection and storage. Solar power ranging from the heat of the day to solar electric conversion technologies will be covered including Solar Electric (Photovoltaic); Thermal; and Heating, Cooling and Lighting (Active and Passive). A brief history of solar powered energies will be included. (F) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
AEET256	Building Commissioning	3	Students learn the step-by-step processes used to perform building commissioning, retro-commissioning, and continuous commissioning. Students will implement software programs, data analysis, and recording techniques to track system energy use. Students compare design documents from building construction or energy system installation with actual performance data. (Sp) Prerequisite: Minimum 2.0 in (DCTM 103 or AEET 251) and Reading Level 5 and Writing Level 6 and Math Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
AEET275	Sustainable Building Design	4	This course is a capstone project lab that offers students the opportunity to apply advanced skills in sustainable energy efficient architectural design and building science at a project construction site. The course will incorporate concepts that were acquired in prior coursework. Specific content may vary based on project specific requirements. (F, Sp, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AEET280	Alternative Energy Practicum	4	Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. Each accepted student will submit a plan that will be approved by the program advisor. The completion of a written project report is required. (F, Sp, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AERO110	USAF Heritage & Values I-Lab	1	This Lab course augments AFROTC academic curriculum by providing prospective Air Force officers the opportunities and feedback needed to develop the leadership, managerial and supervisory skills required of successful Air Force officers. Physical Training (PT) enhances fitness levels of cadets and prepares them to meet AFROTC and Air Force standards, while motivating cadets to pursue a physically fit and active lifestyle. Attendance is mandatory except as arranged with the Operations Flight Commander, through the cadet wing chain of command. (F) Prerequisite Courses: None Placement Scores: None Course Note: Call Aerospace Studies at MSU at (517) 355-2168 for specific days and times.
AERO111	USAF Heritage & Values I	1	This course provides an introduction to the U.S. Air Force today. Course topics include mission and organization, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (F) Prerequisite Courses: None Placement Scores: None Course Note: Call Aerospace Studies at MSU, (517) 355-2168, for specific days and times.
AERO112	USAF Heritage & Values II	1	This course provides an introduction to the U.S. Air Force today. Course topics include officership and professionalism, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (Sp) Prerequisite: None Course Note: Call Aerospace Studies at MSU, (517) 355-2168, for specific days and times.
AERO113	USAF Heritage & Values II-Lab	1	This lab course augments AFROTC academic curriculum by providing prospective Air Force officers the opportunities and feedback needed to develop the leadership, managerial and supervisory skills required of successful Air Force officers. Physical Training (PT) enhances fitness levels of cadets and prepares them to meet AFROTC and Air Force standards, while motivating cadets to pursue a physically fit and active lifestyle. Attendance is mandatory except as arranged with the Operations Flight Commander, through the cadet wing chain of command. (Sp) Prerequisite: None Course Note: Call Aerospace Studies at MSU at (517) 355-2168 for specific days and times.
AERO210	USAF Team & Ldrshp Fund I-Lab	1	This lab course augments AFROTC academic curriculum by providing prospective Air Force officers the opportunities and feedback needed to develop the leadership, managerial and supervisory skills required of successful Air Force officers. Physical Training (PT) enhances fitness levels of cadets and prepares them to meet AFROTC and Air Force standards, while motivating cadets to pursue a physically fit and active lifestyle. Attendance is mandatory except as arranged with the Operations Flight Commander, through the cadet wing chain of command. (F) Prerequisite Courses: None Placement Scores: None Course Note: Call Aerospace Studies at MSU at (517) 355-2168 for specific days and times
AERO211	USAF Team & Leadership Fund I	1	This course focuses on Air Force heritage. Course topics include evaluation of air power concepts and doctrine, introduction to ethics and values, introduction to leadership, and the continuing application of communication skills. Includes a leadership laboratory. (F) Prerequisite Courses: None Placement Scores: None Course Note: Call Aerospace Studies at MSU, (517) 355-2168, for specific days and times.
AERO212	USAF Team & Leadership Fund II	1	Course topics include the role of technology in the growth of air power, group leadership problems, and the continuing application of communication skills. Includes a leadership laboratory. (Sp) Prerequisite: None Course Note: Call Aerospace Studies at MSU, 517-355-2168, for specific days and times.
AERO213	USAF Team/Leadrshp Fund II-Lab	1	This lab course augments AFROTC academic curriculum by providing prospective Air Force officers the opportunities and feedback needed to develop the leadership, managerial and supervisory skills required of successful Air Force officers. Physical Training (PT) enhances fitness levels of cadets and prepares them to meet AFROTC and Air Force standards, while motivating cadets to pursue a physically fit and active lifestyle. Attendance is mandatory except as arranged with the Operations Flight Commander, through the cadet wing chain of command. (Sp) Prerequisite: None Course Note: Call Aerospace Studies at MSU at 517-355-2168 for specific days and times.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ANTH120	Introduction to Anthropology	3	What does it mean to be human? This course is designed to explore this question through the study of the four sub-disciplines of anthropology: biological anthropology, archaeology, anthropological linguistics, and cultural anthropology. We will focus not on thinking of these subfields as four disparate disciplines but rather as four perspectives that, when combined, provide a holistic, comparative, and global understanding of human condition. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ANTH270	Cultural Anthropology	3	This course compares ways of life for societies worldwide using anthropological theory and methodology. Basic institutions of pre-industrial society, such as kinship, religion, law, politics, and economics are examined to provide a better understanding of the diversity of contemporary societies. Cultural variations and the role culture plays in adapting to the environment is emphasized. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ANTH271	Medical Anthropology	3	Medical Anthropology examines the connections between culture and health and illness. The course focuses on contemporary and alternative medicine, including traditional and native healing; and disease patterns in different cultures. A cross-cultural perspective that is invaluable in working with the health of diverse populations is explored. (F, Sp) Prerequisite: Reading Level 5 and Writing Level 6
ANTH272	Food and Sustainability	3	Students will learn about why humans eat what they eat and of the intimate relationship between culture and food economies. They will gain an understanding of the global food industry, its position of power, and its impact on non-Western cultures. This course will have an optional Service Learning Project. (F, Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ANTH 120 or ANTH 270 or SOCL 120. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ANTH275	Physical Anthro & Archaeology	4	An overview of human biological and cultural evolution as evidenced in fossil records. Mechanisms of evolution and cultural adaptation will be traced from pre-historic origins through the development of modern homo sapiens. Major theoretical approaches and methodologies within the subdisciplines of anthropology will be incorporated. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: SOCL 120 and (BIOL 145 or BIOL 201 or High School Biology) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ANTH276	World Archaeology	3	A general survey of archaeology. Includes an overview of the history of the field and the basic theories and methods employed in the study of prehistoric and historic cultures. Archaeological data and sites are used to explain the extinction and continuation of human societies. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ANTH 270 and/or SOCL 120
APPR170	Inside Wireman Apprentice 1-A	4	First of fifteen courses specifically for IBEW/JATC apprentices. Basic electrical safety, using state/federal standards/practices, in the home, electrical laboratory, and in construction and industry are covered. The installation of various wiring systems in wood frame and masonry construction, nonmetallic-sheathed cable, electrical metallic tubing, flexible metal and rigid conduit are also covered. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR171	Inside Wireman Apprentice 1-B	4	Introduces IBEW/JATC apprentices to practical level electricity, use of meters to measure quantities, basic circuit calculations, basic household wiring installation, motor and transformer behavior investigation. Concepts in basic and vector algebra, and trigonometry to solve DC electric circuit problems, including units, Ohm's law, network analysis, series parallel and combination DC circuits inductance and capacitance, and a review of codes/standards will be covered. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
APPR172	Inside Wireman Apprentice 1-C	4	Basic electrical safety practices, including state/federal standards/practices, in the home, laboratory and within construction and industry, construction and interpretation of prints emphasizing standard/nonstandard symbols are covered. Calculations of branch circuits, feeders, motor circuits and service sizes using the National Electrical Code. Uninterruptible power supplies, signaling and safety systems are also covered. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR173	Inside Wireman Apprentice 2-A	4	Structure and scope of the National Electrical Code, including how to locate Ohm's law, voltage drop, wire and conduit sizing and installation method code sections. Utilizes basic and vector algebra and trigonometry concepts to solve AC electric circuit problems. Network analysis, series parallel and combination AC circuits, inductance and capacitance are covered. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR174	Inside Wireman Apprentice 2-B	4	Students will study the installation of nonmetalic sheathed cable, flexible metal conduit, electrical metallic tubing and rigid conduit. This is a practical introduction to AC theory. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR175	Inside Wireman Apprentice 2-C	4	Practical introduction to single- and three-phase transformers, motors and alternators. Construction and interpretation of prints emphasizing standard/nonstandard symbols. National Electrical Code and State of Michigan rules are reviewed. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR176	Inside Wireman Apprentice 3-A	4	This course introduces the student to solid-state circuitry used in industry. Students will study diodes, transistors, SCRs, triacs, optical isolators, transducers, power circuits, etc. Laboratory will include oscilloscope usage. The course also includes an introduction to Boolean algebra and digital circuits. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR177	Inside Wireman Apprentice 3-B	4	Introduction to Boolean algebra, digital circuits and solid-state circuitry used in industry. Diodes, transistors, SCRs triacs, optical isolators, transducers, power circuits, oscilloscopes etc. are studied and used. Installation of nonmetalic sheathed cable, flexible metal conduit, electrical metallic tubing and rigid conduit are practiced. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR178	Inside Wireman Apprentice 3-C	4	Interpretation and construction of prints emphasizing standard/nonstandard symbols. Calculate branch circuit, feeder, motor circuit, and service sizes using the National Electrical Code. Review of the National Electrical Code with focus on location and interpretation. Uninterruptible power supplies, signaling, safety systems and State of Michigan electrical rules are also reviewed. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR179	Inside Wireman Apprentice 4-A	4	Relay logic and controls using industrial standards are covered. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Students will wire three-phase motor control circuits utilizing two- and three-wire control, and machine control circuits utilizing limit and proximity switches, timers, relays, etc. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR180	Inside Wireman Apprentice 4-B	4	Covers relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Wiring three-phase motor control circuits utilizing two- and three-wire control and machine control circuits utilizing limit and proximity switches, timers, relays, etc. are covered. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR181	Inside Wireman Apprentice 4-C	4	Construction and interpretation of prints emphasizing standard/nonstandard symbols. State of Michigan electrical rules and National Electrical Code (NEC) review focusing on locating and interpreting codes. Use of the index method to discuss interpretation of the NEC to calculate branch circuit, feeder, motor circuit and service sizes. Uninterruptible power supplies, signaling and safety systems are covered. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR182	Inside Wireman Apprentice 5-A	4	This course covers various code calculations using the NEC and state electrical code in preparation for the State of Michigan journeyman's exam. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
APPR183	Inside Wireman Apprentice 5-B	4	For apprentices with field experience and basic electrical training. Covers security and fire alarm systems, sensors, instrumentation setup and calibration, theory of flow, pressure level, temperature, pneumatics, telephone wiring, high voltage safety and testing, heating, ventilating, air conditioning (HVAC) theory, programmable controllers, controls and troubleshooting, and uninterruptible power supplies. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR184	Inside Wireman Apprentice 5-C	4	Covers programmable logic controllers with focus on common operating principles. Includes capabilities, similarities, and differences among controllers, programming (examine on/off, timers and counters) and connecting external devices to Allen-Bradley and Modicon. Includes review of the National Electrical Code and the State of Michigan electrical rules. (F,Sp,Su) Prerequisite: Current IBEW Electrical Apprentice
APPR220	Special Topics/Electricians	.25 to 8	This course offers apprentice and journey electricians the opportunity to learn new or advanced skills in the commercial and residential electrical industry and other related topics. Specific content may vary with each offering and will be related to the electrical profession. (F,Sp,Su) Prerequisite: Apprentice or Journey Electrician
APPR225	Fire Alarms	3	Covers fire alarm systems, circuits, fundamentals, installation practices, interfaced systems, supervising stations, system requirements, testing and maintenance, dwellings, basic troubleshooting, related code requirements (NEC and the National Fire Alarm Code), and NICET testing preparation. Upon successful completion, students will be prepared to take the NICET Level II Fire Alarm Technician Examination. (F,Sp,Su) Prerequisite: Current IBEW Apprentice or Journeyman
APPR227	Supervisor Training	4	This course will offer students practical advice about how to handle real-life, on-the-job situations. Students will take on the role of a job site supervisor as it relates to blueprint reading, work layout, manpower, materials, tools, etc. (F,Sp,Su) Prerequisite: Current IBEW Apprentice or Journeyman
APPR228	Conduit Fabrication	3	This course will provide a comprehensive overview of conduit bending and fabrication procedures to develop basic competencies for field applications. (F,Sp,Su) Prerequisite: Current IBEW Apprentice or Journeyman
APPR230	Motor Control Level I	3	Relay logic controls using industrial standards are covered. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Students will wire three-phase motor control circuits utilizing two- and three-wire control, and machine control circuits utilizing limit and proximity switches, timers, relays, etc. (F,Sp,Su) Prerequisite: Current IBEW Apprentice or Journeyman
APPR231	Motor Control Level II	3	Advanced relay logic and controls using industrial standards are covered. Use of symbols and standard construction of wiring and ladder diagrams is emphasized. Students will wire three-phase motor control circuits utilizing advanced controls including two- and three-wire control, and machine control circuits utilizing limit and proximity switches, timers, relays, etc., reversing controls, plugging techniques, and multiple-motor controls. (F,Sp,Su) Prerequisite: Minimum 2.0 in APPR 230
ARCH105	Architecture Appreciation	2	This course will introduce students to the practice of architecture and its allied professions while building a foundation for further coursework within the architecture curriculum. Fundamental aesthetic, social, and environmental issues in architecture and design, including practice, creative processes and electronic media will be examined. (F) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4
ARCH107	Sustainable Site Design	3	This course covers the fundamentals of landscape architecture and the reconnection of a site to its environment through the study of site analysis and design, earthwork and grading, accessibility, water conservation and supply, and landscaping. Preparation of sustainable site plan drawings will be created in accordance with course topics. (Sp) Prerequisite Course: Minimum 2.0 in ((DCTM 101 or concurrently) or Architectural Drafting Placement Test 80%)Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ARCH110	Visual Communications I	3	Architectural graphics is the focus of this course and will introduce students to basic techniques of freehand sketching, drafting, and perspective drawings. Rendering skills, shading, and introductory model building will also be addressed. The production of two-dimensional black and white architectural rendering and presentation drawings will be studied. (F) Prerequisite Courses: Minimum 2.0 in DCTM 101 or concurrently or Architectural Drafting Placement Test 80% Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
ARCH111	Arch Design Fundamentals	3	Examination of the principles and elements of two-dimensional design as it relates to architecture. Specific case studies of buildings that exemplify these theories as well as organization and circulation of space and form will be analyzed. Topics include basic design theory and practice, green design project application, and visual/verbal presentation techniques. (F) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: ARCH 107 or concurrently
ARCH113	Materials & Methods of Constr.	4	An introduction to and evaluation of building materials that explores the implications of design realities, material capabilities, code limitations, and regulations on the construction process. Social, environmental, and economic impacts, life-cycle analysis, cost, sourcing, energy efficiency, and value engineering including a value system for selecting environmentally preferable products will be discussed. (F) Prerequisite Courses: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 4 and Writing Level 4
ARCH114	Architectural Drawing/CAD I	4	This course introduces architecture technology students to computer-aided drafting for residential application. Basic commands, drafting techniques, drawing accuracy, and industry standards will be emphasized. Lectures, in class demonstration, and lab sessions will be utilized to create two-dimensional residential drawings with value and importance placed on green design and sustainability. (F) Prerequisite Course: Minimum 2.0 in DCTM 101 or concurrently or Architectural Drafting Placement Test 80% Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
ARCH118	Architecture Design/Planning	4	One in a sequence of design studio courses focusing on programmatic green building design. Emphasis is on code, research, accessibility, and adaptive use while solving small to medium scale architecture design problems. Topics include environmental and site issues, space planning, and construction document development. Applied studio assignments build on knowledge and skills acquired. (Sp) Prerequisite Courses: Minimum 2.0 in (ARCH 110 and ARCH 114) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
ARCH120	Visual Communications II	3	A continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media to enhance drawing skills and realistically render surfaces two/three-dimensionally. Specific shading, texture, light and composition techniques - both freehand and computer generated - will be explored. Composition/verbal presentation of projects will be emphasized. (Sp) Prerequisite Course: Minimum 2.0 in ARCH 110 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
ARCH124	Architectural Drawing/CAD ll	4	As the continuation of Architectural Drawing/Basic CAD l, students will build on their computer-aided drafting skills for commercial application. Drawing accuracy and industry standards will be emphasized. Lectures, in-class demonstration, and lab sessions will be utilized to create two dimensional commercial drawings. (Sp) Prerequisite Course: Minimum 2.0 in ARCH 114 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 5
ARCH125	Environmental Systems	4	This course is designed for students of both architecture and allied professions. All elements affecting interior environments of a commercial or residential structure, such as electrical and HVAC systems, water efficiency, sustainable site and material selection, and passive solar design will be studied. Energy efficient and responsible construction practices will be emphasized. (F) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
ARCH126	Architecture Model Building	3	Students in this course will enhance their design and communication skills by developing various techniques for building three-dimensional architectural models. Projects constructed will range from the most basic of study model using readily available sustainable materials, to more sophisticated presentation models focusing on the use of responsible and earth sustaining materials. (Sp) Prerequisite Course: Minimum 2.0 in (DCTM 101 or Architectural Drafting Placement Test 80%) Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ARCH141	History of Architecture I	3	Beginning with ancient times, this course studies the major civilizations and works of architecture, and analyzes the form and function of the built environment contributed by the most significant of the Western civilizations. A variety of visual media will be used to present the major theories, architectural works, and the significant personalities contributing to architecture up to the Italian Renaissance. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
ARCH142	History of Architecture II	3	This course is the second in a series of the study of architectural history of the western world. The works and figures of architecture and the decorative arts in western architectural history from the 1600's to contemporary times are examined. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
ARCH146	Preservation/Adaptive Use Arch	3	An overview of the principles and practices of the greenest and most sustainable type of architecture; recycling, preservation, and adaptive use of existing buildings. Students will have the opportunity to work on an actual building using material forensic investigation to determine material conditions and history, apply adaptive use design, and sustainable preservation practices. (F) Prerequisite Course: Minimum 2.0 in (ARCH 110 or concurrently) Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
ARCH175	Special Topics in Architecture	.25 to 8	This course offers students the opportunity to learn new or advanced skills in environmentally responsible design and evaluation, computer aided drafting or other topics as applied to architecture. Specific content may vary with each offering and will be related to the Architecture Program and profession. (F,Sp,Su) Prerequisite: Determined by Section
ARCH176	Special Topic/Architecture P/Z	.25 to 8	This course offers students the opportunity to learn new or advanced skills in computer aided drafting or other topics as applied to architecture. Specific content may vary with each offering and will be related to the Architecture Program and profession. This course will be graded on a Pass/Fail basis. (F, Sp, Su) Prerequisite: Determined by Section
ARCH218	Commercial Arch Planning	4	In this intermediate level course, students will use previously obtained drawing, research, and presentation skills to design, delineate, and present a light commercial project from basic schematics to presentation drawings. Students will be introduced to environmentally responsible design considerations and applications at the earliest design and planning stages of a project. (F) Prerequisite Course: Minimum 2.0 in ARCH 114 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
ARCH220	Commercial Arch Drawing	4	In this capstone course, students will complete a set of commercial construction documents based on their schematic design developed in ARCH218 using previously obtained CAD and structural theory skills. Students will further research appropriate energy saving design systems to minimize the environmental footprint of their building design. (Sp) Prerequisite Course: Minimum 2.0 in ARCH 218 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
ARCH233	Revit Architecture BIM I	4	This course is an introduction to Autodesk's Revit Architecture, a three-dimensional building information modeling software (BIM) that generates all phases of design from concept sketches through construction documentation. Students will develop three-dimensional parametric models and standard two-dimensional construction drawings for typical construction use. (F) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
ARCH235	Arch AutoCAD Independent Study	1 to 4	This course is intended to give advanced architectural students an opportunity to complete a special project(s) that relates to the student's curriculum. The student will research, outline, design and construct a project(s) of their own selection, with the approval and guidance of the instructor, using the AutoCAD software program. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
ARCH243	Revit Architecture BIM ll	4	As the continuation of Revit Architecture BIM l, students will build on their three-dimensional building information software (BIM) and parametric modeling skills for construction drawings. Drawing accuracy and industry standards will be emphasized. Lectures, in-class demonstration, and lab sessions will be utilized to create two and three dimensional construction documents. (Sp) Prerequisite Course: Minimum 2.0 in ARCH 233 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 5

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ARCH275	Sustainable Building Design	4	This course is a capstone project lab that offers students the opportunity to apply advanced skills in sustainable energy efficient architectural design and building science at a project construction site. The course will incorporate concepts that were acquired in prior coursework. Specific content may vary based on project specific requirements. (F, Sp) Prerequisite Courses: None Department Approval is required. Placement Scores: None
ARCH290	Architectural Internship	2 to 4	This course provides Architectural Technology students with practical work experience in industry. Students work for an employer in a supervised environment that provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
ARCH295	Arch Independent Study	1 to 4	This course will give advanced architectural students an opportunity to complete a special project(s) that relates to their architectural curriculum. With the approval and guidance of an instructor, the students will research, outline, design, and construct a project(s) of their own selection. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
ARTS102	Design & Communication	3	An examination of visual communications theory, process and history. Students will study the universal elements and principles of two-dimensional design and their applications in monochromatic, still, and time-based media. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) Recommended: Computer experience Course Notes: 1) Face-to-Face sections use Adobe Photoshop CC on Macintosh computers. Online students are required to have semester-long access to Adobe Photoshop CC to complete their assignments. Students may access this software in the LCC TLC 100 Computer Lab. Access to a Wacom Intuos or Bamboo Digital Drawing Tablet is highly recommended but not required. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ARTS103	Spatial Dynamics I	3	This is an introductory course exploring the elements and principles of three dimensional design. The course will examine traditional and narrative-based potentials or materials and objects.(F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 102 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Students purchase own art supplies and materials.
ARTS104	Spatial Dynamics II	3	An introduction to interfacing a variety of imaging, audio, and communication appications with physical space and integrating them to projects where stories, images, time management, and time-based actions are explored. This course prepares students in advanced image creation for all ARTS curriculu. (F,Sp) Prerequisite: Minimum 2.5 in ARTS 102 and (minimum 2.5 in ARTS 103 or concurrently) and Reading Level 5 and Writing Level 6
ARTS105	Adobe Photoshop for Non-Majors	2	This course is designed to give non-majors an introduction to the Adobe Photoshop CC software. Students will learn file formats and saving files properly, scanning, color correction and adjustment, compositing, and image manipulation of print and digital images for web use and printed output. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None Recommended: Computer experience
ARTS131	Drawing I	3	An introductory course in visual thinking, conceptual drawing, and studio practices. Students will learn to translate verbal and written concepts through creative processes into visual information in sketches, developmental drawings, and finished imagery. Fundamental elements of drawing and principles of perspective are covered. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
ARTS132	Figure Drawing	3	An intermediate level course in visual thinking, conceptual drawing, and studio practices exploring fundamental elements of drawing, visualization, and perception of the human figure, using a variety of drawing media and methods. Live models will be used. (F,Sp,Su) Prerequisite Courses: Minimum 2.5 in ARTS 131 Placement Scores: Reading Level 5 and Writing Level 6
ARTS151	Color and Design	3	This is an introduction to additive and subtractive color theory and practice. Students explore how the color properties of hue, saturation, and value relate to design and examine color interactions, color relationships, and the physical and psychological effects of light and color. Digital and traditional color media are used. (F,SP) Prerequisite Courses: Minimum 2.5 in ARTS 102 and ARTS 131 Placement Scores: Reading Level 5 and Writing Level 6. Course Note: This course uses Photoshop CC on Macintosh computers.
ARTS153	Drawing II	3	This is an intermediate level course in visual thinking, conceptual drawing, and perspective drawing. Students will use creative processes to express verbal and written concepts as visual information ideate through preparatory drawings and develop visualizations with a variety of media. (Sp) Prerequisite Courses: Minimum 2.5 in ARTS 102 and ARTS 131 Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ARTS162	Type Communications	3	An introduction to the utilization of type in a variety of visual communications with an emphasis on creativity and problem solving. Students will be introduced to the tools and techniques of manual and digital type formatting in professional type layout for print and web purposes. (F,Sp,Su) Prerequisite Course: Minimum 2.5 in ARTS 102 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Online students are required to have semester-long access to Adobe Illustrator CC. Students have access to this software in the LCC TLC 100 Computer Lab.
ARTS164	Vector Drawing	3	A creative course involving vector-based illustration software. Students will draw by manipulation of algorithmicly created arcs, lines, and curves to form shapes. The focus is on graphics information communication. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 102 and ARTS 131 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ARTS 162 Course Note: Adobe Illustrator CC on Macintosh computers is used.
ARTS171	Comp Graphics/Digital Imaging	3	An introduction to computer manipulation of digital images. (F,Sp,Su) Prerequisite Courses: Minimum 2.5 in (ARTS 102 or PHOT 118) or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) Adobe Photoshop CC software is used. Online students are required to have semester-long access to Adobe Photoshop CC to complete their assignments. Students have access to these in the LCC TLC 100 Computer Lab. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ARTS173	Computer Graphics/Web Design	3	A course in the effective visual presentation of ideas for the web from concept and design to structure, preparation and production. Focus on the elements and principles of design as applied to layout, graphics and animation. (F,Sp,Su) Prerequisite Courses: Minimum 2.5 in ARTS 171 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) This course uses Adobe Dreamweaver CC on Macintosh computers.
ARTS175	Creative Design and Publishing	3	An introductory course concerned with creative page layout. The focus is on using Adobe InDesign CC and incorporating the Adobe Creative Suite for layout, prepress, and repurposing. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 102 and ARTS 162 or concurrently Placement Scores: Reading Level 5 and Writing Level 6
ARTS179	Interface Design	3	Introduction to concepts and practices of user-centered interaction design applied to interfaces for human-computer interactions such as Web sites, instructional and immersive applications. Explores processes of developing information architecture, navigation, visual layout and aesthetics of interfaces according to principles of user-centered design, emphasizing accessibility and usability. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 102 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: This course uses Adobe Illustrator and Photoshop CC.
ARTS183	Design Markets and Influences	3	An introductory course that examines the theory, practice, and development of modern and contemporary graphic design, typography, and imagery. The emphasis is on conceptual design and relevant styles and techniques used to achieve design, marketing and advertising goals. This course investigates how the various styles and techniques of the periods discussed reflect and affect design ideas, issues and social values. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ARTS 212
ARTS195	Employ/Busn Issues for Artists	1	An introduction to business, legal, and marketing issues relevant to visual artists. Students will be introduced to copyright, contracts and negotiation concerns, and basic record keeping. (F,Sp) Prerequisite Courses: None Placement Scores: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.
ARTS200	Painting I	3	An introduction to oil and/or acrylic painting. The course examines the basic materials, tools, techniques, and modes of expression of painting. (F,Sp) Prerequisite Courses: None Placement Scores: None Course Note: Students purchase own art supplies and materials (approx. $200).
ARTS201	Painting II	3	A continuation of Painting I (ARTS200) emphasizing more advanced techniques and increasingly complex problems in painting. A variety of media, techniques, and approaches is explored. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 200 Placement Scores: None Course Note: Students purchase own art supplies and materials (approx. $200).

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ARTS207	Sculpture	3	This course introduces basic sculpture techniques, such as carving, casting, and modeling, with emphasis on understanding issues of line, plane, shape, and volume. Plaster, clay, and wood are utilized to help the student understand the form and content of sculpture. Contemporary and historical sculpture topics supplement this course. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Recommended: Minimum 2.5 in ARTS 103 Course Note: Students purchase own art supplies and materials.
ARTS226	Storyboards & Animatics	3	Focuses on applying industry-standard storyboarding and animatic techniques. Topics include the purposes and formats of storyboards and the application of storyboarding techniques to the creation of storyboards with or without a written script. Completed storyboards will be digitized and edited using various software to produce an animatic. (F,Sp) Prerequisite: Minimum 2.5 in ARTS 151 and Reading Level 5 and Writing Level 6 Course Note: This course uses the Adobe Creative Suite on Macintosh computers.
ARTS229	Comp Graphics/Adv Web Design	3	An advanced course in interaction and its application to web design problems. Focuses on the structuring of information, conceptualization and sequencing in the design of web sites. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 173 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: This course uses Adobe Dreamweaver CC, PHP, and MySQL on Macintosh computers.
ARTS232	Comp Graphics/2-D Animation	3	Creation of 2-D animations using the computer. Emphasis is on the theory and principles of animation. Student will develop an animation of a bipedal character. (F) Prerequisite Courses: Minimum 2.5 in ARTS 132 and ARTS 151 and ARTS 171 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: This course uses the Adobe Creative Suite on Macintosh computers.
ARTS234	Comp Graphics/3-D Animation I	3	Concepts and techniques of 3D computer animation. An introduction to the world of Digital Form, Space and Lighting. Topics covered in this course include the theories of 3-D space, surface modeling, rendering, lighting and key frame animation. Includes an overview of the history of 3D computer modeling, rendering and animation. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 105 or ARTS 171 Placement Scores: Reading Level 5 and Writing Level 6 Recommended: PHYS 120 Course Note: This course uses Autodesk Maya on Macintosh computers.
ARTS235	Comp Graphics/3-D Animation II	3	This course builds upon ARTS234. It continues the approach of increasing skills and artistic practice in all areas of 3Danimation: concept, modeling, animation and rendering. Course also includes topics such as: texture mapping, particle systems, dynamic simulation and basic kinematic techniques(F,Sp) Prerequisite: Minimum 2.5 in ARTS 234 and Reading Level 5 and Writing Level 6 Course Note: This course uses Autodesk Maya on Macintosh computers.
ARTS240	Art for Elementary Teachers	3	Especially for elementary school teachers responsible for the student art experience. Emphasis on developing a greater art appreciation, awareness of art forms, and competency working with a variety of art media. Covers the creative and mental growth of children and their needs in an art situation. (F,Sp,Su) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: EDUC 201 and EDUC 220 Course Note: EDUC201 and EDUC220 are prerequisites for transfer of this course to Central Michigan University.
ARTS251	Graphic Design Communications	3	A comprehensive overview of design communications and the role of the graphic artist. Methods, computer software and hardware issues will be covered with the focus on persuasive design communications. (F,Sp) Prerequisite Courses: Minimum 2.5 in ARTS 164 and ARTS 175 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: This course uses the Adobe CC Suite on Macintosh computers.
ARTS252	Graphic Design Publications	3	Publication design and the graphic artist's role in design and production of longer documents is the focus of this advanced collaborative course. The emphasis is on concept, typography and visual elements in a weekly, monthly or quarterly publication. (F, Sp) Prerequisite: Minimum 2.5 in ARTS 251 and Reading Level 5 and Writing Level 6 Course Note: This course uses the Adobe CC Suite on Macintosh computers.
ARTS253	Graphic Design Branding	3	This advanced class focuses on branding of products and services for mass market advertising. The course will focus on aspects relevant to a marketing campaign as well as on creating innovative concepts and developing an effective personal design style. (F,Sp) Prerequisite: Minimum 2.5 in ARTS 251 and Reading Level 5 and Writing Level 6 Course Note: This course uses the Adobe CC Suite on Macintosh computers.
ARTS269	The Portfolio	2	Under advisor supervision, students will assemble their best work into a cohesive, relevant presentation for the purpose of securing career-oriented employment. Job search/market skills content, including creative resumes, letter-writing, and self-promotion will focus on matching individual presentations to specific career goals. ARTS269 is intended as the final program course. (F,Sp) Prerequisite Courses: None. Department Approval is Required Placement Scores: None Course Note: Fine Art and transfer students should see an Art, Design and Multimedia advisor before enrolling in ARTS 269. Please check with the Communication, Media and the Arts Department Office in GB 1222 for current department approval forms.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ARTS281	Art Internship	3	Students will gain pre-career experience by working in a professional environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty member. A typical internship will average 160-210 hours in a semester. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
ASTR201	Introductory Astronomy	4	A survey course of astronomy. Topics include the celestial sphere, apparent motions, and orbital mechanics; the nature of light, spectroscopy and astronomical instrumentation; the Earth, the Moon, the Sun and the solar system; stellar nucleosynthesis, and stellar characteristics, distances, classification and evolution; and galaxies and cosmology. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 5 or (MATH 107 or MATH 109 concurrently)] Recommended: It is recommended that students taking ASTR 201 have taken a high school Physics or Physical Science course Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
AUTB101	Safety and Shop Operations	2	This course covers safety, hand and power tool usage, and collision repair shop operations. Included are state/federal environmental and safety regulations. Careers in the collision repair field will be explored. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
AUTB104	Damage Analysis Estim/Cust Srv	2	This course prepares students to analyze collision damage, determine what parts are needed for repair, and calculate labor allowances to figure the total cost of repair. Collision repair manuals and computer programs will be used as sources of information. Customer relations and sale's techniques will be included. (F, Sp) Prerequisite Course: Minimum 2.0 in (AUTB 101 or concurrently) Reading Level 3 and Writing Level 2 and Math Level 3 and Department Approval Course Note: $50 of the Course Fee is non-refundable.
AUTB106	Refinishing I	5	The material in this course will form the basis for all automotive refinishing work. Surface preparation, material selection and the use of various refinishing equipment will be covered. (F, Sp) Prerequisite Course: Minimum 2.0 in (AUTB 101 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
AUTB107	Non-Structural Repair I	5	This course introduces the student to basic repairs that involve parts removal and replacement. Students will also perform simple body repairs on steel panels. All work will be completed according to industry standards. (F, Sp) Prerequisite Course: Minimum 2.0 in (AUTB 101 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
AUTB114	Collision Repr Welding/Cutting	3	This course will present welding processes that will be the basis of many of the repair techniques in the collision repair industry. MIG, resistance spot welding, and plasma arc cutting are included. (F,Sp) Prerequisite Course: Minimum 2.0 in (AUTB 101 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
AUTB136	Refinishing II	5	This course builds on skills developed in AUTB 106. Refinishing, spot repairs and color matching with a variety of refinish materials will be stressed. Defect analysis causes and cures will be covered. (Sp) Prerequisite Courses: Minimum 2.0 in (AUTB 106 or AUTB 118) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 and Department Approval Course Note: For students wishing to enroll in this course, please call 517-483-5338 for Department Approval.
AUTB137	Non-Structural Repair II	5	This course builds on AUTB 107-Non Structural Repair I. Students will perform repairs that include welded/bonded parts removal and replacement. Students will also perform advanced repairs on steel, aluminum, and plastic panels. All work will be completed according to industry standards. (Sp) Prerequisite courses: Minimum 2.0 in (AUTB 107 and (AUTB 114 or concurrently)) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 and Department Approval
AUTB150	Struct Analysis/Damage Repr I	4	This course addresses the repair, measurement, and analysis of unibody and full-frame vehicles. The student will learn how to diagnose damage using computerized measuring equipment. The proper operation and setup of frame machine(s) and measuring equipment will also be covered. (Sp) Prerequisite Courses: Minimum 2.0 in ((AUTB 106 or AUTB 118) and AUTB 107 and AUTB 114) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4 and Department Approval

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AUTB163	Collision Repair Indep Study	1 to 4	Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. The completion of a written project report is required. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Recommended: Evidence of mechanical ability
AUTB200	Collision Related Mechanical I	4	This course will cover collision-related mechanical repairs including basic electrical, heating, ventilation and air conditioning, cooling system, and restraint/safety systems. Students will learn electrical theory and diagnostic procedures to identify and repair malfunctioning mechanical systems. (F) Prerequisite Courses: Minimum 2.0 in (AUTB 101 and AUTB 104) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
AUTB202	Collision Related Mech II	4	This course will cover collision-related mechanical repairs including steering, suspension, brakes, drive trains, exhaust, and fuel systems. Students will learn electrical theory and diagnostic procedures to identify and repair these types of malfunctioning mechanical systems. (Sp) Prerequisite Courses: Minimum 2.0 in (AUTB 101 and AUTB 104) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
AUTB210	Topics/Contemp Collision Repr	.25 to 8	This course offers students the opportunity to learn new or advanced skills in contemporary collision repair issues. Specific content may vary with each offering and will be related to the Collision Repair Program and profession. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AUTB240	Auto Body Restoration	4	Students will learn skills, equipment use, and techniques to perform auto body restoration. This will include panel evaluation, preparation, and preservation, as well as fabrication, shrinking, stretching, and hammer welding techniques. Students will also learn to fill, sand, and prime panels for painting. (Sp) Prerequisite Courses: Minimum 2.0 in (AUTB 114 and (AUTB 106 or AUTB 118)) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
AUTB250	Struct Analysis/Damage Repr II	4	This course builds on skills learned in AUTB 150. The student will analyze, diagnose, and repair frame and body misalignments using industry current repair equipment. Diagnosis and repair of advanced materials, including aluminum and high strength steels, will be covered. (F) Prerequisite Courses: Minimum 2.0 in ((AUTB 136 or AUTB 120) and AUTB 137 and AUTB 150) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
AUTB290	Collision Tech Internship	1 to 4	Students are able to earn credits while employed as a technician in collision repair. The program coordinator must approve the training station and working conditions. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None
AUTM102	Automotive/Collision Safety	1	This course will introduce students to automotive industry standard practices for shop safety, tool safety, and personal safety. Students will be familiarized with shop policies and procedures including hazardous waste disposal, along with laws and regulations that affect automotive repair facilities. Students will learn how to use various types of lifting equipment. (F, Sp) Prerequisite Courses: None Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $16 of the Course Fee is non-refundable.
AUTM111	Automotive Electrical I	4	This course prepares students for ASE and State of Michigan certification testing in automotive electrical systems. Topics include electrical system theory and operation, diagnosis, and repair of automotive electrical/electronic circuits, electrical wiring, battery, and starting and charging systems. This course meets NATEF Master Automotive Service Technology (MAST) standards for electrical/electronic systems. (F, Sp) Prerequisite Courses: Minimum 2.0 in [(AUTM 102 or concurrently) or AUTM 101] Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AUTM112	Battery/Start/Charge Systems	2	This course covers automotive battery, starter and charging systems theory, operation and diagnosis. This course meets NATEF Maintenance and Light Repair (MLR) and Master Automotive Service Technology (MAST) standards for electricity/electronics. (F, Sp) Prerequisite Courses: Minimum 2.0 in ((AUTM 110 or concurrently) or AUTO 111) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee.
AUTM113	Automotive Electrical II	4	This course prepares students for ASE and State of Michigan certification testing in automotive electrical systems. Topics include electrical system theory and operation, diagnosis, and repair of automotive comfort and convenience accessories, instrumentation, and lighting circuits. This course meets NATEF Master Automotive Service Technology (MAST) standards for electrical/electronics systems. (F, Sp) Prerequisite Courses: Minimum 2.0 in ((AUTM 111 or concurrently) or AUTM 110) Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106) Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM125	Manual Drive Train and Axles	4	This course prepares students for ASE and State of Michigan certification testing in manual drivetrains and axles. Topics include theory and operation, maintenance, diagnosis, disassembly, inspection, repair, and overhaul of manual transmissions/transaxles, clutch systems, differentials, four-wheel drive systems, and other driveline components. This course meets NATEF Master Automotive Service Technology (MAST) standards for manual transmissions. (F, Sp) Prerequisite Courses: Minimum 2.0 in [(AUTM 102 or concurrently) or AUTM 101] Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM126	Automatic Transmissions	4	This course prepares students for ASE and State of Michigan certification testing in automatic transmissions. Topics include transmission theory and operation, maintenance, diagnosis, disassembly, inspection, repair, and overhaul of modern electronic automatic transmissions/transaxles. This course meets NATEF Master Automotive Service Technology (MAST) standards for automatic transmissions. (F, Sp) Prerequisite Courses: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110] Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM131	Automotive Engine Repair	4	This course prepares students for ASE and State of Michigan certification testing in automotive engine repair. Topics include theory and operation, maintenance, diagnosis, disassembly, inspection, repair, and overhaul of engines, cooling systems, lubrication systems, and in-vehicle and out-of-vehicle engine servicing. This course meets NATEF Master Automotive Service Technology (MAST) standards for engine repair. (F, Sp) Prerequisite Courses: Minimum 2.0 in ((AUTM 111 or concurrently) or AUTM 110) Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106) Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM141	Braking Systems and ABS	4	This course prepares students for ASE and State of Michigan certification testing in braking systems. Topics include theory and operation, maintenance, diagnosis, disassembly, inspection, and repair of disc and drum braking systems, anti-lock brake/traction control systems, and related brake components. This course meets NATEF Master Automotive Service Technology (MAST) standards for brakes. (F, Sp) Prerequisite Courses: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110] Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AUTM151	Suspension and Steering	4	This course prepares students for ASE and State of Michigan certification testing in suspension and steering. Topics include theory and operation, maintenance, diagnosis, disassembly, inspection, and repair of suspension and steering systems, wheel alignment, wheels and tires, and steering/suspension related components. This course meets NATEF Master Automotive Service Technology (MAST) standards for suspension and steering. (F, Sp) Prerequisite Courses: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110] Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM161	Auto Heating/Air Conditioning	4	This course prepares students for ASE and State of Michigan certification testing in heating and air conditioning. Topics include theory and operation, maintenance, diagnosis, inspection and repair of automobile heating, ventilation, and air conditioning systems; and recovery, recycling, and handling of refrigerants. This course meets NATEF Master Automotive Service Technology (MAST) standards for heating, ventilation, and air conditioning. (F, Sp) Prerequisite Courses: Minimum 2.0 in ((AUTM 111 or concurrently) or (HERT 125 or concurrently) or AUTM 110) Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106) Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM180	Intro to Alternative Fuels	2	Students will use various sources in the alternative fueled vehicle industry to learn what alternative fuels are available. Students will examine the need for alternative fuels including: Propane, Natural Gas, Ethanol and Biodiesel. Students will also learn about new technologies such as Electric Drive and Hydrogen fueled vehicles as well as Fuel Economy and Idle Reduction considerations. (F,Sp) Prerequisite Courses: None Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
AUTM185	Automotive Special Topics	.25 to 8	The Automotive Special Topics series will feature topics related to the automotive industry. The lectures will allow participants to explore a wide variety of topics that will range from State of Michigan Recertification and Alternative Fuels to Advanced Drivability Diagnosis. Specific topics vary each semester; check the semester schedule book for topics to be offered. (F,Sp,Su) Prerequisite: Determined by Section
AUTM211	Automotive Electrical III	4	This course prepares students for ASE and State of Michigan certification testing in this subject area. Topics include theory and operation, diagnosis, and repair of comfort and convenience accessories, restraint systems, computer multiplexing, entertainment/navigation systems, and advanced electrical technologies. This course meets NATEF Master Automotive Service Technology (MAST) standards for electrical/electronics systems. (F, Sp) Prerequisite Course: Minimum 2.0 in (AUTM 113 or concurrently) Placement Scores: (Reading Level 3 or ENGL 098 concurrently) and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM270	Gas Eng Drivability Diagnosis	4	This course prepares students for ASE and State of Michigan certification testing in this subject area. Topics include theory and operation, maintenance, diagnosis, and repair of engine mechanical integrity, fuel delivery systems, powertrain computer systems, and air induction and exhaust systems. This course meets NATEF Master Automotive Service Technology (MAST) standards for engine performance. (F, Sp) Prerequisite Courses: Minimum 2.0 in [(AUTM 211 or concurrently) or AUTM 210] Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM273	Lt. Diesel Drivability Diag.	4	This course covers engine management of a light duty diesel engine, including diagnosis and repair of electronic diesel fuel injection systems, air induction systems, particulate filter systems and oxidation catalyst systems. This course meets NATEF Automotive Service Technology (AST) and Master Automotive Service Technology (MAST) standards for light diesel engine control systems.(F, Sp) Prerequisite Course: Minimum 2.0 in (AUTM 270 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AUTM275	Ignition/Emission Sys Diag.	4	This course prepares students for ASE and State of Michigan certification testing in ignition and emissions systems. Topics include theory and operation, maintenance, diagnosis, and repair of ignition and emission control systems and computer devices that cause emissions failures. This course meets NATEF Master Automotive Service Technology (MAST) standards for engine performance. (F, Sp) Prerequisite Course: Minimum 2.0 in (AUTM 270 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. Books are included as part of the course fee. $35 of the Course Fee is non-refundable.
AUTM280	Electric/Fuel Cell Technology	2	This course is designed to help prepare the student to enter the automotive repair and service industry in the area of alternative fuels and advanced technology vehicles. It is an intensive study of vehicle electric and fuel cell theory, application, installation, diagnosis, service and safety regulations. (F) Prerequisite Courses: Minimum 2.0 in [AUTM 180 and (AUTM 270 or concurrently)] Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. See course syllabus for textbook information. $40 of the Course Fee is non-refundable.
AUTM282	Gaseous Fuels	3	This course is designed to help prepare the student to enter the auto repair and service industry in the area of alternative fuels and advanced technology vehicles. It is an intensive study of three gaseous fuels - natural gas, propane and hydrogen. Theory, application, installation, diagnosis and safety regulations will be covered. (F,Sp) Prerequisite Courses: Minimum 2.0 in [AUTM 180 and (AUTM 270 or concurrently)] Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. See course syllabus for textbook information. $40 of the Course Fee is non-refundable.
AUTM284	Hybrid Systems & Maintenance	4	This course introduces the student to the features of the Internal Combustion Engine (ICE) as they apply to the hybrid vehicle, hybrid drive systems (transaxles and gears), brake systems, HVAC systems, and cooling systems service. First responder, predictive maintenance procedures, hybrid trucks, and Belted Alternator System (BAS) are also examined. (F) Prerequisite Courses: Minimum 2.0 in (AUTM 180 and AUTM 270) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. See course syllabus for textbook information.
AUTM286	High Voltage Battery Tech	4	This course introduces the student to high voltage battery technology: electrical service safety precautions and personal protection, high voltage tools and equipment usage, battery energy management hardware systems, battery removal and installation, and battery rebuilding. (Sp) Prerequisite Courses: Minimum 2.0 in (AUTM 180 and AUTM 270) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. See course syllabus for textbook information.
AUTM288	High Voltage Management	4	This course introduces the student to AC induction electric machines, permanent magnet electric machines, power inverter systems, electric propulsion sensing systems, communication networks, predictive maintenance, and building an ATV. (F) Prerequisite Courses: Minimum 2.0 in (AUTM 286 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: Students need to bring their own safety glasses and dress in appropriate work clothes to start working in the lab on the first day of class. See course syllabus for textbook information.
AUTM290	Automotive Internship	1 to 4	Students are able to earn credits while employed as an intermediate/advanced level technician in an auto mechanic shop or dealership. The program coordinator must approve the training station and working conditions. (F, Sp, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AUTM296	Automotive Independent Study	1 to 4	Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. A presentation or written report is required at the end of the proejct. (F, Sp, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AUTM298	Automotive Service Laboratory	2 to 6	This laboratory course is designed to provide work experience and develop trade-entry skills in general and light-line repair. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AVAF125	Aircraft Systems I	2	The study of fuel management, transfer, defueling and fuel pump systems. The course covers the procedures used to inspect, check, service, troubleshoot and repair aircraft fuel systems and fuel system components. Course material emphasizes fluid quantity indicating, fluid pressure and warning systems. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF126	Aircraft Systems II	6	This course covers the study, analysis and repair of aircraft landing gear and brake systems and their related warning systems. It also includes the study, inspection, servicing and repair of aircraft hydraulic and pneumatic systems and their related components. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF127	Aircraft Systems III	3	This course covers the inspection, checking, troubleshooting, servicing and repair of aircraft heating, cooling, air-conditioning, pressurization, oxygen, ice and rain control, and fire protection systems. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF134	Aircraft Instruments	2	This course covers inspection, checking, servicing, troubleshooting, repair of electronic flight instrument systems, both mechanical and electrical speed, altitude, temperature, pressure and flow instrument systems. Also, special removal and installation techniques applicable to aircraft instruments are included. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF140	Aircraft Welding	2	Presents welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aviation maintenance techniques. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
AVAF208	Aircraft Structures I	4	This course introduces the procedures for identification, inspection, testing and repairing of wood, fabric-covered and sheet metal aircraft. The installation and removal of conventional rivets, forming of aircraft sheet metal, installation of special rivets and fasteners, and an introduction to applying finishing materials will also be covered. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF209	Aircraft Structures II	4	This course covers assembly and rigging of fixed wing and rotary wing aircraft control structures. It provides practical application in removal, installation and adjustment of flight controls by balancing, cable tension and motion studies. Aircraft inspection procedures to insure conformity with flight safety standards will be included. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF210	Aircraft Structures III	4	An advanced course covering inspection, repair, layout, bending and assembly of aircraft sheet metal. Inspection, testing and repair of fiberglass, plastics, honeycomb, composite and laminated structures are practiced. Installation and removal of special fasteners for bonded and composite structures and servicing of aircraft windows, doors and interior furnishings is included. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF211	Aircraft Electrical I	4	An intermediate aviation electrical course concentrating on theory, calculation and measurement of A.C. electrical systems. Includes reading and interpreting aircraft electrical circuit diagrams, including those with solid-state devices and logic functions. The installation, checking and servicing of airframe and engine wiring, controls, switches, indicators and protective devices are also covered. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF212	Aircraft Electrical II	4	Repair of airframe and engine electrical system components with an emphasis on the inspection, checking, servicing and repair of alternating and direct current systems. General troubleshooting techniques are practiced with special emphasis on A.C. and D.C. electrical systems. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVAF246	Airframe Certification	1	Study of the Federal Aviation Regulations pertaining to national certification as a licensed airframe mechanic. Includes testing in all required areas of study as a prerequisite to receiving authorization to take the general and airframe national certification test administered by representatives of the Federal Aviation Administration. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVEL202	Flight Line Testing	3	This course is a practical study of the electronics systems found aboard modern aircraft, focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADF, radar, and autopilots. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AVGM100	Directed Independent Study	1 to 4	This course includes special research, projects, or other directed study in an aviation maintenance area. Students may enroll to update or enhance knowledge, skills, and competencies. Grading criteria and course objectives are determined at the first meeting. Sixteen hours of study are assigned per credit. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVGM111	Aviation General I	4	This course is designed to develop the skills and knowledge required to weigh an aircraft and record the appropriate data. It involves mathematical and basic physics principles related to aviation, including aerodynamics, theory of flight, aircraft structural design and simple machines. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVGM112	Aviation General II	6	Introduces the Federal Aviation Regulations involving the mechanic's privileges, limitations and related aviation operations. Includes the selection and use of aviation publications, maintenance forms, records, reports, aircraft drawings, graphs and charts, symbols, blueprints and system schematics. Also focuses on aircraft ground operations and servicing of related aircraft systems. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVGM113	Aviation General III	4	This initial aviation electrical course offers instruction in basic electrical theory and its aviation application. It includes the calculation and measurement of voltage, current resistance, continuity and power; and the theory, inspection and servicing of aircraft lead-acid and ni-cad batteries; and the construction of a volt-ohm meter. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVGM114	Materials and Processes	5	This course covers identification and selection of the appropriate aviation hardware, hand tools, cleaning materials, fluid lines and nondestructive testing methods. Performance of nondestructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, installation and testing of fluid lines is included. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP241	Reciprocating Engine	8	Presents the theory and practices used in the removal, inspection, overhaul, service, repair and installation of reciprocating engines. This course also studies the inspection, service, repair and troubleshooting of reciprocating engine lubrication systems. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP251	Reciprocating Engine Systems	2	This course covers the inspection, servicing, troubleshooting and repair of reciprocating engine cooling and exhaust systems. In addition, the inspection requirements necessary to meet established conformity and standards of airworthiness are studied; and reciprocating engine operations and adjustments are conducted using FAA and maintenance publication procedures. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP253	Reciprocating Ignition Systems	5	This course covers the operation, analysis, inspection, service and repair of reciprocating engine ignition systems and components. This includes magnetos, ignition harnesses, spark plugs and starter systems. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP255	Reciprocating Induction Sys	4	Study and analysis of reciprocating engine fuel systems and components. Includes inspection, checking, servicing, troubleshooting and repair of carburetors, water injection systems, heat exchangers, superchargers, intake and induction manifolds and other engine fuel system components. Also includes carburetor overhaul procedures. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP257	Aircraft Propeller Systems	4	Covers the study, analysis, service and repair of aircraft propellers, systems and controls. Includes propeller synchronizing, ice control, lubrication, balancing, pitch control, repair procedures and removal, and installation of both fixed-pitch and variable-pitch propellers. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP259	Turbine Engine I	4	This course covers the theory of operation and design of the varied turbine engine powerplants and turbine-driven auxiliary power unit types, including the induction and cooling systems of each. (Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP261	Turbine Engine II	4	This course covers inspection, checking, servicing, repair, removal, installation and troubleshooting of turbine engines and systems. A detailed study of the lubrication system and inspection procedures to insure conformity with FAA specifications and standards are included. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
AVPP263	Turbine Engine Systems	2	This course is a detailed study of turbine-engine ignition, pneumatic and electric starters, exhaust and thrust reverser, fire detection and protection, fuel metering and electronic fuel control systems and components. Study also includes inspection, checking, servicing, repair and troubleshooting procedures. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP265	Powerplant Instruments	2	This course covers the inspection and repair of turbine and reciprocating engine instruments. Troubleshooting of mechanical/electrical fluid rate-of-flow, temperature, pressure, RPM and airflow indicators will be included. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
AVPP267	Powerplant Certification	1	Study of the Federal Aviation Regulations pertaining to national certification as a licensed powerplant mechanic. Includes testing in all required areas of study as a prerequisite to receiving authorization to take the powerplant national certification tests administered by representatives of the Federal Aviation Administration. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
BIOL120	Environmental Science	4	Students will develop an ecological knowledge base to allow them to understand how human actions impact the environment. They will develop applied analytical skills through laboratories, fieldwork, simulations and a discussion of contemporary issues. They will investigate and evaluate basic ecological and environmental issues.(F,Sp,Su) Prerequisite Courses: None Placement Scores: (Reading Level 5 or ENGL 099 concurrently) and Writing Level 6 Course Notes: 1) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx. 2) An online course also has some labs requiring students to physically tour a field lab facility or to do simple experiments at home.
BIOL121	Biol Foundation for Physiology	4	Topics include atomic structure, chemical bonding, organic molecules, biological molecules, enzymes, metabolism, cell structure and function, passage of materials across membranes, harvesting energy, mitosis, meiosis, and the relationship between DNA, RNA, and protein synthesis. Designed for students preparing for health careers. Recommended prerequisite for BIOL 201 and 202. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Recommended: CHEM 120 or High School Chemistry Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BIOL125	Introductory Biology	4	This is an introductory biology course for non-science majors. Lecture and lab topics include cell theory, evolution, a survey of life, and basic plant and animal anatomy. Students will analyze scientific data and investigate current biological issues. (F,Sp) Prerequisites Courses: None Placement Scores: Reading Level 5 and Writing Level 6
BIOL127	Cell Biology	4	Lecture topics include chemistry of carbohydrates, lipids and proteins; structure and function of prokaryotic and eukaryotic cells; biochemistry of respiration and photosynthesis; and molecular genetics, regulation of gene expression, and biotechnology. Laboratory stresses techniques of cell and molecular biology and molecular genetics. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in [CHEM 120 or (CHEM 151 or concurrently)] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4.
BIOL128	Organismal Biology	4	This course examines adaptations of organisms to changing environments. Major emphasis is on physiological adaptations, natural selection, and ecology. Lab topics include a survey of the kingdoms, behavior experiments, and field studies. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106).
BIOL145	Intro Anatomy and Physiology	4	An introductory course in human anatomy and physiology which combines lecture and laboratory experiences to provide a basic understanding of the structure and function of body systems. Designed for vocational programs, that include emergency medical technicians, massage therapists, medical technicians, and medical transcriptionists, as well as for non-science majors. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)].

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
BIOL201	Human Anatomy	4	A lecture and laboratory study of the anatomy of the human body that includes the structures of the skeletal, muscular, nervous, sensory, circulatory, respiratory, digestive, excretory, endocrine, and reproductive systems. Designed for students preparing for health occupations such as nursing, radiologic technology, dental hygiene and surgical technologists. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]. Recommended: Minimum 2.0 in (BIOL 121 or BIOL 127 or CHEM 120 or CHEM 151) or passing score on Health Biology Proficiency Test.
BIOL202	Human Physiology	4	The physiology, regulation, biochemistry, and integration of various organ systems in the human body are presented. Emphasis is on normal function, but appropriate clinical aspects may be discussed. Laboratory topics complement the lecture. Designed for students preparing for health occupations such as nursing, radiologic technology and dental hygiene. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in BIOL 201 or concurrently and [Minimum 2.0 in MATH 109 or (MATH 119 or STAT 170 concurrently) or Math Level 5 noted below] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 5
BIOL203	Microbiology	3	An introduction to bacteria, viruses, and other microorganisms as they relate to human health. Emphasis on bacterial and viral structure, life cycles, and genetics; antimicrobial therapy; immunology and host defenses; epidemiology, treatment, and prevention of infectious human diseases. Designed for health career and other science students. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]. Recommended: Minimum 2.0 in (BIOL 121 or BIOL 127 or CHEM 120 or CHEM 151) or passing score on Health Biology Proficiency Test. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BIOL204	Microbiology Laboratory	1	Basic laboratory principles of microbiology for allied health students. Emphasis on microscopy, aseptic cultivation and enumeration of microorganisms, differential staining, assays of antimicrobial agents, and diagnostic laboratory techniques. Students will identify unknown bacterial species. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in BIOL 203 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
BIOL210	Natural Resource Conservation	4	This course examines the renewable natural resources and the policies which govern their use in Michigan. Lecture topics include ecology, water, wildlife, forests, and soils. Laboratory investigations include measurement techniques, environmental problem solving and field studies. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
BIOL229	Nature Study for Educators	4	A general biology course for educators and education majors on integrated understanding of the natural world, including the biotic and abiotic components comprising three typical mid-Michigan environmental communities: an aquatic, a forest, and a field community. (F,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Recommended: ISCI 122
BIOL260	Botany	4	An introduction to the study of plants that includes structure and function, development, and ecology. Emphasis will be placed on the diversity, adaptations, and life cycles of major plant groups. Laboratory will complement the basic concepts with emphasis on physiology, systematics, and species of value to medicine and agriculture. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: One semester of college-level biology
BIOL265	Zoology	4	Topics include principles of taxonomy; early animal development; the diversity of animal body plans; and protozoan biology. Course deals principally with taxonomy, early development, and comparative anatomy of members within the animal phyla and classes. Groups are surveyed in a phylogenetic approach. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Recommended: One semester of college-level biology
BIOL270	Human Genetics	3	Presents general principles of genetics with specific human application. Topics include Mendelian genetics, mitosis and meiosis, chromosome structure and aberrations, sex determination and x-linkage, molecular basis of inheritance, gene mutations, genetics of immune system, cancer genes, recombinant DNA technology, and genetic screening and counseling. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Recommended: One semester of college-level biology Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
BIOL275	Molecular Biology I	4	Introduces principles of molecular biology, DNA/RNA structure, function and replication, Polymerase Chain Reaction, and recombinant DNA technology. Laboratory emphasizes reagent preparation, culturing bacteria, isolating and purifying bacterial and plasmid DNA, restriction enzyme digests, and agarose gel electrophoresis analysis. Field trip to research laboratories. Designed for Laboratory Technicians. (F) Prerequisite Courses: Minimum 2.0 in BIOL 127 and CHEM 151 and CHEM 161 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
BIOL276	Molecular Biology II	4	Continuation of BIOL275. Advanced lecture topics in bacteriophage biology, gene analysis, gene sequencing, and applications of molecular biotechnology. Gene cloning experiments with plasmid vectors, and construction of a genomic library, and protein analysis. Designed for Laboratory Technicians. (Sp) Prerequisite: Minimum 2.0 in BIOL 275 and Reading Level 5 and Writing Level 6 and Math Level 4
BLDT120	Structural Framing	4	This course covers the key concepts for furnishing and installing various components related to floors, walls, and roofs for new and existing residential and light commercial construction according to industry standards and code specifications. (F) Prerequisite Courses: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
BLDT130	Building Exterior Construction	4	This course covers the key concepts for furnishing and installing various exterior components such as roofing, siding, doors, and windows for new and existing residential and light commercial construction according to industry standards and code specifications. (Sp) Prerequisite Courses: Minimum 2.0 in ((DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106) Recommended: BLDT 120 or BLDT 121
BLDT140	Building Interior Construction	4	This course covers the key concepts for furnishing and installing various components related to floor finish, wall finish, ceilings, millwork, and interior doors for new and existing residential and light commercial construction according to industry standards and code specification. (F) Prerequisite Courses: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106) Recommended: (BLDT 120 or BLDT 121) and (BLDT 130 or BLDT 125)
BLDT150	Intro Masonry/Concrete Const	4	This course introduces the basic properties and practices of concrete construction and masonry construction. Upon completion of this course, students will have the knowledge and skills necessary to take the ACI (American Concrete Institute) certification exam for Flatwork Technician. (Sp) Prerequisite: Reading Level 4 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106)
BLDT160	Steel Framing	4	Students will learn commercial metal stud framing, step-by-step methods to master high-speed metal framing, and learn about new tools, materials and equipment. Students will be introduced to technical and practical experience with light gauge stud design and standards. (F, Sp) Prerequisite Courses: None Reading Level 4 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106) Recommended: BLDT 120 or BLDT 121 or concurrently
BLDT170	Special Topics in Construction	.25 to 8	This course offers students the opportunity to learn new or advanced skills in residential building, woodworking, or other construction-related topics. Specific content may vary with each offering and will be related to the Residential Building program and profession. (F,Sp,Su) Prerequisites: Determined by Section
BLDT171	Special Topic/Construction P/Z	.25 to 8	This course offers students the opportunity to learn new or advanced skills in residential building, woodworking, or other construction-related topics. Specific content may vary with each offering and will be related to the Residential Building program and profession. This course will be graded on a Pass/Fail basis. (F, Sp, Su) Prerequisite: Determined by Section

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
BLDT180	Builder Pre-Licensure Prep	4	This course will provide the student with the information needed to pass the Michigan Builder's License Examination as well as techniques for running a successful contracting business. It is approved by the State of Michigan and satisfies the 60-hour pre-license course requirement. The program is for anyone who is interested in becoming a licensed contractor in Michigan. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106) Course Note: This course fulfills the State of Michigan 60-hour requirement to apply for a Residential Builder or Maintenance & Alteration Contractor license. If you need more information, call 517-483-5338.
BLDT285	Residential Bldg Internship	2 to 4	This course offers students the opportunity to work for a residential builder in an actual job situation. The students can gain experience working with tools used in the industry and applying what they learned in the classroom and laboratory. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (BLDT 120 or BLDT 121). Departmental Approval is required. Placement Scores: None Restriction: Building Construction Majors
BSEM100	Business Related Seminar	.25 to 5	This course will cover a variety of topics in business related fields. For individuals already employed in the environment seeking to upgrade their skills or anyone looking to be employed in a particular career field. (F,Sp,Su) Prerequisite: None
BUSN118	Introduction to Business	3	Introduction to principles, problems, and practices - related to the world of business. Topics covered include, but not limited to: business management and organization, marketing, finance, economics, production, and international business. Application of the above topics will be done through backpack simulation or business plan project.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BUSN150	Legal Issues: Start Small Busn	2	This course will introduce, but not limited to, the legal aspects of starting and operating a small business. Topics will include selecting the appropriate legal structure for setting up a business, complying with employment law, protecting intellectual property, avoiding legal disputes, and other legal aspects of purchasing and operating a business. (F,Sp) Prerequisite: Reading Level 5 and Writing Level 4 Course Note: Previously LEGL 150 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BUSN155	Marketing Your Small Business	1	Marketing relevant to entrepreneurship is the prime focus for this course. Student exposure will involve entrepreneurial marketing concepts such as, marketing research, marketing analysis, promotion, pricing, channel development, brand development, target markets, customer bases and competition analysis. The course is entirely application focused, which will result in a marketing plan strategically built for the business venture of the student, or the business venture assigned to the student. (F,Sp,Su) Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4.
BUSN157	Business Feasibility Analysis	2	This course will explore your business idea(s) to determine whether the venture has potential to succeed. The class will give you the tools needed for trial-and-error testing before moving forward to the start-up phase. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4
BUSN160	Starting a Business	4	This course will introduce students to the world of entrepreneurs and their role in small business. There will be an emphasis on building a "business" which will include the elements of entrepreneurship, management, marketing and finance. The Internet will be used as a resource and many real-life cases will be studied. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BUSN161	Writing a Business Plan	2	The focus of this course is on writing a business plan. Students will develop a realistic business plan which includes the marketing plan and financial plan. The successful plan will be clear and concise and incorporate the mission, goals, objectives and implementation strategies of the business as outlined and presented in the course text. (F,Sp) Prerequisite Course: Minimum 3.0 in BUSN 160 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
BUSN201	International Business	3	Overview of international business: organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import quotas and export controls, balance of payments, and free trade versus protectionism. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 Recommended: BUSN 118 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BUSN250	Personal Finance	3	Provides a broad survey of topics including budgeting, buying and leasing a car, renting, buying or selling a home, credit requirements, time value of money, insurance, and other personal financial planning topics. Not intended to be a financial planning course, but students will need basic knowledge of financial areas. A capstone group project will apply the materials covered in this course. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
BUSN251	Understanding Investments	3	Study of securities market to give framework with which to set investment goals and achieve desired results. Introduction to some of the more prevalent theories, concepts, and skills to aid in developing strategies and making sound investment decisions related to the stock market. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and [Math Level 5 or minimum 2.0 in (MATH 105 or MATH 106)]
BUSN254	Introduction to Investments	2	This course covers the fundamental principles of investing and its role in our economy. Emphasis will be on developing terminology, types of investments, and personal financial planning such as mutual funds, real estate, CDs, money market funds, limited partnerships, insurance, IRAs, stock, and tax shelters. This is an overview course. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
CHDV100	Foundations Early Childhood Ed	3	This course provides a broad view of essential elements in early childhood education and care including the role of the early childhood education professional. Topics include elements of quality, providing a supportive emotional environment, influences on children's learning including family and culture, and the importance of matching curriculum to development. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4 Recommended: Child Development and Early Education Major Course Notes: To complete an Associate Degree or Certificate in Child Development and Early Education in the shortest possible time, students must enroll in CHDV 100 and CHDV 111 in their first semester. An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHDV101	Child Growth/Develop: 0-10 Yrs	4	This course examines the growth and development patterns of children up through age ten in physical, social, emotional, cognitive and language development. This includes the influences of health, play, families, the early childhood education experience, and other environmental factors which impact development. Students acquire skills in observing and recording child behavior. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHDV111	Child Guidance/Communication	4	This course, which includes field work, examines interaction skills and environmental structures which foster social and emotional growth in children in early childhood education and care settings. Topics include positive guidance and discipline, effective communication with children, problem solving, and social skill development. (F,Sp) Prerequisite Course: Minimum 2.5 in CHDV 100 or concurrently Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4 Course Note: By Thursday, August 15, 2019, all students must register for 4 hours/week at an approved (by CHDV program) weekday daytime fieldwork site by calling 517-483-1417. Students must pass an ICHAT criminal background check and receive clearance that they are not on the State Child Abuse and Neglect registry prior to the beginning of field placement. In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the course management site and/or in class. To complete an Associate Degree or Certificate in Child Development and Early Education in the shortest possible time, students must enroll in CHDV 100 and CHDV 111 in their first semester.
CHDV113	Health/Safety:Early Child Prog	2	Examines health and safety issues in early education and care programs. In this context, the focus is on planning strategies and best practices in areas such as prevention/management of communicable diseases, management of allergies and chronic illnesses, nutrition, playgrounds, procedures for handling emergencies and other health/safety issues. (Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: Child Development and Early Education Major Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website at http://www.lcc.edu/assessment/off_campus/online_support.aspx
CHDV122	Creativity and Play	1	This course examines curriculum and activities which enhance the creative development of children in early childhood education. Students will explore the role of play and hands-on experiences in the development of creativity. Specific information on activities in the areas of art, music, movement, and dramatic play are shared. Information on physical and sensory development is also included. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHDV123	Literacy and Play	1	This course examines language and literacy development for children birth through age 5. Focus is on planning and supporting language development, emergent reading, and emergent writing through a play-based, developmentally appropriate curriculum. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHDV124	Young Investigators: Math/Sci	1	This course focuses on cognitive development in early childhood, highlighting problem-solving skills, math and science experiences, and explorations of the natural world. Through hands-on activities, students will investigate developmentally appropriate experiences for children in early childhood. Appropriate questioning techniques, environments, and ways to integrate exploration and problem-solving into daily routines and other aspects of the curriculum are explored. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: Experience in Early Childhood Education and Care
CHDV126	Discovery Learning:Inf/Tod Gps	1	Students will examine infant and toddler early childhood program curriculum opportunities that support children's natural curiosity and exploration, and enhance their discoveries. Students will participate in practical learning experiences to develop teaching strategies designed to enhance the developmental levels and learning styles of infants and toddlers. (Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4
CHDV127	Understand Inf/Tod Behavior	1	This course provides practical learning experiences that focus on individual differences, development and temperament as a way to recognize and effectively respond to children's behavior. Nurturing relationships and caregiver responsiveness to infants and toddlers in early childhood programs are emphasized as a foundation for all learning and as an important influence on social-emotional development. (F) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHDV128	Partnerships in Inf/Tod Care	1	This course explores strategies for creating infant toddler care and education environments that support partnerships, with families, colleagues, and ancillary professionals, as a means for supporting children's development. A sensitive, attentive approach to inclusion issues, including culture, language, developmental delays and disabilities, as a foundation for effective partnerships is emphasized. (Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4
CHDV184	Children and Stress	1	This course examines stress as it relates to children. Specific topics include symptoms and causes of stress, situations which are stressful for children, ways to help children cope with stress, and techniques for reducing stress. Divorce and death are among topics discussed. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHDV186	Child Self-Esteem/Positive Dis	1	This course looks at children's self-esteem: what it is, where it comes from, and how it can be fostered in both home and early education settings. It focuses on practical suggestions and teaches positive guidance and discipline techniques that build self-esteem. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHDV189	Help Children Value Diversity	1	This course explores how early education and care programs can promote diversity and encourage cultural competence through embracing and respecting similarities and differences and family diversity. Topics include identity formation, bias, cultural awareness, integrating diversity into the program and curriculum, and family culture. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4
CHDV215	Infant Toddler Program Dev	4	This course, which includes field work, explores social-emotional and physical environments needed for quality early education and care for infants and toddlers. Focus includes developing positive interactions, relationship skills, developmentally appropriate activities and materials, managing routines, and observation skills. (F,Sp) Prerequisite Courses: Minimum 2.5 in CHDV 100 and CHDV 101 and (CHDV 111 within 5 years) Placement Scores: Reading Level 5 and Writing Level 6 Course Note: By Thursday, August 15, 2019, all students must register for 4 hours/week at an approved (by CHDV program) weekday daytime fieldwork site by calling 517-483-1417. Students must pass an ICHAT criminal background check and receive clearance that they are not on the State Child Abuse and Neglect registry prior to the beginning of field placement. In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the course management site and/or in class.
CHDV220	Early Child Curr/Learn Environ	4	This course, with field work, explores developmentally appropriate programming which promotes physical, cognitive, language, literacy, and creative development in preschool-age early education and care settings. Emphasis is on active involvement of children in concrete experiences. Other topics include learning environments, materials and equipment, learning goals, and observation and assessment skills. (F,Sp) Prerequisite Course: Minimum 2.5 in CHDV 215 (previously CHDV 221) Placement Scores: Reading Level 5 and Writing Level 6 Course Note: By Thursday, August 15, 2019, all students must register for 4 hours/week at an approved (by CHDV program) weekday daytime fieldwork site by calling 517-483-1417. Students must pass an ICHAT criminal background check and receive clearance that they are not on the State Child Abuse and Neglect registry prior to the beginning of field placement. In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the course management site and/or in class.
CHDV222	Caring for School-Age Children	2	This course examines developmentally appropriate programming for school-aged children in after-school, school-age, or before and after care settings. Course topics include professionalism, development and learning needs of the school-age child, environment and program structure, individual and group management, and planning appropriate learning experiences. (F) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHDV225	Families and Inclusion	4	This course examines inclusive strategies for young children, and approaches to establish and maintain supportive relationships with families. It includes: understanding current systems of assessment and services children and families may be involved in, supporting the child's relationship with his/her family by developing respectful communication strategies, understanding the complex strengths and diversity of families, and recognizing professional roles and responsibilities. (F,Sp) Prerequisite Courses: Minimum 2.5 in CHDV 215 (previously CHDV 221) or CHDV 220 Placement Scores: Reading Level 5 and Writing Level 6
CHDV230	Early Childhood Program Admin	3	This course examines the administrative role in managing an early childhood education and care program. The focus is on providing a safe, healthy environment; developing effective leadership and management strategies; meeting professional standards and advocacy; and effective communication techniques. (F,Sp) Prerequisite Courses: Minimum 2.5 in CHDV 215 (previously CHDV 221) or CHDV 220 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHDV284	Early Childhood Practicum	6	A capstone supervised field experience in an early education and care program. Students plan and implement an environment and curriculum that are healthy, respectful, and challenging for children. Authentic assessment is used in planning for individuals. Accompanying seminar explores the teacher's role in planning, goal-setting, evaluation, family relationships, and professionalism. (Sp) Prerequisite Courses: Minimum 2.5 in CHDV 215 (previously CHDV 221) and CHDV 220 and [CHDV 225 (previously CHDV 112) or concurrently] Placement Scores: Reading Level 5 and Writing Level 6 Course Note: By Thursday, August 15, 2019, all students must register for 12 hours/week at an approved (by CHDV program) weekday daytime fieldwork site by calling 517-483-1417. Students must pass an ICHAT criminal background check and receive clearance that they are not on the State Child Abuse and Neglect registry prior to the beginning of field placement. Students may be required to submit additional medical documentation for field placement sites as required by Michigan Child Care Licensing. In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the course management site and/or in class.
CHDV297	Child Dev Directed/Indep Study	.25 to 4	This course includes special research, directed study, or service-learning projects in child development. It requires at least 16 hours of independent work for each credit. A learning contract specifying objectives, activities, and outcomes is required. (As Needed) Prerequisite Course: None. Program Approval is required.
CHEM120	Gen Organic & Biological Chem	4	Introduces topics in general, organic, and biological chemistry that are used in health-related occupations. Included are scientific measurement, atomic structure and bonding, chemical equations and stoichiometry, solutions, acids, bases, buffers, gas behavior, nuclear radiation, organic functional groups, and the biologically important compounds: carbohydrates, lipids, and proteins. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
CHEM125	Basic Chemistry	4	Intended for students who have not had high school chemistry or who require a refresher course. Measurement, problem solving, chemical formulas, chemical equations, stoichiometry, atomic structure, chemical bonding, gas laws, solutions, and acids and bases are emphasized. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and (Math Level 5 or concurrent enrollment in MATH 109).
CHEM130	Biochemistry	4	This course is designed to provide an understanding of the chemistry of life processes. Topics include organic functional groups, enzymes, carbohydrates, lipids, proteins, metabolic pathways, nucleic acids, biochemical genetics, blood and respiratory chemistry, urine, electrolytes, acid-base balance, and hormones. (F,Sp,Su) Prerequisite: Minimum 2.0 in CHEM 120 or CHEM 125 or CHEM 151 and Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106).
CHEM135	Chemistry in Society	4	A general education course which presents chemistry to non-science majors who must function and make decisions in a society shaped by science and technology. Chemistry knowledge is introduced and applied on a need-to-know basis with respect to issues in society that have significant chemistry components. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 or minimum 2.0 in MATH 105 or MATH 106

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHEM151	General Chemistry Lecture I	4	The first of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, physical sciences, biological sciences, or engineering. Topics discussed include measurement, aqueous reactions, stoichiometry, thermochemistry, atomic structure, bonding, and acids and bases. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 6 or (MATH 109 or MATH 112) or concurrently Recommended: (Minimum 2.0 in CHEM 125 or High School Chemistry) and CHEM 161 concurrently
CHEM152	General Chemistry Lecture II	3	The second of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, sciences, or engineering. Topics include aqueous equilibria, kinetics, nuclear chemistry, oxidation-reduction, transition metals, coordination chemistry, thermodynamics, electrochemistry, modern materials, and green chemistry. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in CHEM 151 and [(MATH 121 or MATH 126) or concurrently or Math Level 7 as noted below] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 7 Course Note: Students planning to transfer to four-year institutions are encouraged to take MATH 121 as the prerequisite for this course.
CHEM161	General Chemistry Lab I	1	Laboratory course designed to complement CHEM151. Stresses basic laboratory techniques, writing lab reports, and critical thinking exercises. Topics include density determination, synthesis, empirical formulas, molecular geometry, gas laws, pH, chemical equilibrium, and water hardness. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in CHEM 151 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 6 or (MATH 109 or MATH 112) or concurrently]
CHEM162	General Chemistry Lab II	1	Laboratory course designed to complement CHEM152. CHEM162 is the second semester general chemistry laboratory course. Stresses laboratory techniques and analyzing and reporting laboratory data. Topics include inorganic synthesis, chemical analysis, acid-base and solubility equilibria, oxidation-reduction reactions, and chemical kinetics. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in [CHEM 152 (or concurrently) and CHEM 161] and [(MATH 121 or MATH 126) or concurrently or Math Level 7 as noted below] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 7
CHEM182	Introductory Organic Chemistry	3	A survey of the principles of organic chemistry. Introduces the student to structure, nomenclature, chemical and physical properties, selected characteristics, preparations and reactions of the most common classes of organic compounds. Other topics include polymers, optical isomerism, and selected reaction mechanisms. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Minimum 2.0 in CHEM 151
CHEM192	Intro Organic Chem Lab	1	Designed for students in majors such as chemical processing, packaging, agriculture, and forestry who require only one credit of organic lab. It gives students an introduction to common techniques, equipment, and chemicals found in an organic laboratory. Particular attention is given to compounds studied in CHEM182. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in CHEM 182 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Recommended: CHEM 151
CHEM251	Organic Chemistry Lecture I	4	The first lecture course of a two-semester sequence in organic chemistry for chemical engineering, chemical technology, chemistry, or pre-professional majors. Topics include structure and bonding, hybridization, nomenclature, stereochemistry, thermodynamics and kinetics of organic reactions, functional groups including reactions and mechanisms, and applications of infrared and mass spectrometries. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in CHEM 151 Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Minimum 2.0 in CHEM 152
CHEM252	Organic Chemistry Lecture II	4	Continuation of CHEM251. Topics include aromatic compounds, spectroscopy, organometallic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, enolates, phenols, carbohydrates, polymers, and proteins. (F,Sp) Prerequisite Courses: Minimum 2.0 in CHEM 251 Placement Scores: Reading Level 5 and Writing Level 6
CHEM262	Quantitative Analysis	3	This course covers the theory and procedures of classical analytical techniques, including gravimetric analysis and titrimetric methods. Use of instruments such as spectrophotometers, pH meters, and others is also included. Designed for laboratory technician preparation, chemistry majors, or transfer students.(F) Prerequisite Courses: Minimum 2.0 in (CHEM 152 and CHEM 162) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 7

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHEM272	Organic Chemistry Laboratory	2	Designed for students (in majors such as chemistry, pre-med, and pre-pharmacy) who require more than one credit of organic lab. It gives students experience with the chemicals, techniques, and equipment commonly employed in organic laboratories. Particular attention is given to compounds studied in CHEM251 and 252. (F,Sp) Prerequisite Courses: Minimum 2.0 in CHEM 251 Placement Scores: Reading Level 5 and Writing Level 6 Recommended: CHEM 252 concurrently
CHIN121	Elementary Chinese I	4	First course of a two-semester sequence in elementary Chinese. Students gain knowledge of Pinyin, the formation of Chinese characters, and the formation of Chinese words, as well as basic communication skills through dialogues, reading, writing, and listening comprehension. Everyday life in China, Chinese people, and culture are introduced and discussed. (F, Su) Prerequisite: Reading Level 5 and Writing Level 6
CHIN122	Elementary Chinese II	4	Second course of a two-semester sequence in elementary Chinese. Students in this course receive additional communication-oriented Chinese language skills, which include speaking, reading, writing, and listening. Communication effectiveness will be improved. Building on the foundation of CHIN 121, an additional 500 Chinese word combinations will be learned.(SP) Prerequisite: Minimum 2.0 in CHIN 121 or equivalent and Reading Level 5 and Writing Level 6
CHSE100	Intro to Health Professions	3	This course is an overview of healthcare careers. It explores the business of healthcare, safety, and healthcare costs. It includes the introduction to concepts of leadership and management, patient teaching, communications, time management, critical thinking, and career pathways. It includes learning vital signs, drug dose calculations, and medical terminology. (F,Sp) Prerequisite Course: Valid CPR certification through the end of class from ((American Heart Association/Health Care Provider or American Red Cross/Basic Life Support for Healthcare Providers) or (Passing grade in NCHE 102 or NCHE 103 within 2 years or concurrently)) Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4 Course Notes: 1) In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the course D2L site and/or in class. 2) It is highly recommended that students complete Basic Life Support Certification (BLS) prior to the start date of class. BLS certification is required and must remain current through the end of the semester before a final grade for CHSE 100 can be issued. 3) Students with current AHA BLS Provider CPR or American Red Cross/Professional Rescuer Certification should call 517-483-1277 for a prerequisite override prior to registration.
CHSE108	Long-Term Care Nurse Aide	5	This course will prepare an individual to be a nurse aide in a long-term care facility or home health care agency. This state-approved course will provide specific knowledge and skills required for a nurse aide to safely function in a long-term care setting. Upon successful completion, the student is eligible to take the Certified Nurse Assistant (CNA) Exam. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 Course Notes: Provides training for CNA testing, nursing home, and Home Health Aide. Required - 1. Completion of Bloodborne Pathogens online training; information given first day of class. 2. Negative 2-step TB (tuberculosis) tests within the last year. 3. Students MUST pass an ICHAT criminal background check. ICHAT to be completed on first day of course (credit card required). 4. Proof of required immunizations. 5. Students MUST meet physical requirements for the duration of course as specified in course syllabus. Course Note: $15 of the course fee is for a medical kit and is non-refundable.
CHSE114	Pathophysiology-Allied Health	3	General principles of pathophysiology are discussed in order to develop a new way of thinking about disease processes. Concepts of specific disease processes and their effect on normal structure and function of the body are presented. Disease prevention concepts are also discussed. (F,Sp) Prerequisite Course: Minimum 2.5 in BIOL 145 or (BIOL 201 and BIOL 202) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHSE117	Health Law and Ethics	2	This course presents for discussion, legal and ethical issues arising from the organization and delivery of health care services. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit the Testing Services website.
CHSE119	Community Health Career Topics	.25 to 8	This course offers students the opportunity to learn new community health career skills and knowledge. Specific up-to-date content will vary with each seminar and will be related to the community health careers. (As Needed) Prerequisite Course: Determined by Section Placement Scores: Determined by Section

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CHSE120	Medical Terminology	4	Medical Terminology provides an in-depth knowledge of word building, use, pronunciations, spelling, term building, and the application of medical terms in relation to function, structure, and specific disease conditions. Emphasis is placed on medical terms from periodicals, textbooks, and medical care areas. This is a health careers foundational course. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
CHSE123	Medical Ins Billing/Coding I	4	This course introduces insurance billing and diagnostic and procedure coding using the International Classification of Diseases (ICD-10), Current Procedural Terminology (CPT), and National Healthcare Common Procedures Coding System (HCPCS) coding systems. The course also introduces the legal and compliance issues and their relationship to insurances. (F,Sp) Prerequisite Course: Minimum 2.5 in CHSE 120 or concurrently. Computer, keyboarding, and internet skills and experience required. Placement Scores: Reading Level 5 and Writing Level 4
CHSE124	Medical Ins Billing/Coding II	4	The course provides comprehensive billing directions for BCBS of Michigan, Medicare, Medicaid, commercial insurances including HMOs, managed care, and worker's compensation. (Sp) Prerequisite Course: Minimum 2.5 in CHSE 123 Placement Scores: Reading Level 5 and Writing Level 4
CHSE125	Comp-Med Ins Billing/Coding	2	This course, in combination with CHSE 124, introduces students to software used in medical office billing and coding. Students learn to record charges/payments/information; schedule appointments; ICD-10, and CPT coding; produce claim forms and patient statements; and build office databases. (Sp) Prerequisite Course: Minimum 2.5 in CHSE 123 Placement Scores: Reading Level 5 and Writing Level 4
CHSE127	Medical Ins Billing/Coding III	3	The focus of this course is coding and billing for inpatient and outpatient hospital-based services. Students will be introduced to the ICD-10 diagnostic and procedure codes. DRGs and their impact are discussed, as are recording charges using the UB-04 and CMS 1500 claim forms. Students will post payments, review and resubmit claims, and perform account receivable follow-up and collections. (Sp) Prerequisite Course: Minimum 2.5 in CHSE 124 or concurrently Placement Scores: Reading Level 5 and Writing Level 4
CHSE130	Medical Ins Bill/Code Extern	3	This course provides students with worksite experience and training that is both physician office and hospital based. This experience will reinforce skills learned in CHSE 123, 124, 125, and 127, and prepare students for an entry-level position in the medical billing and coding field. Students are required to attend lectures which will include discussion of professional work-place skills, resume writing, and interviewing skills. (F,Sp,Su) Prerequisite Courses: Minimum 2.5 in CHSE 125 and CHSE 127. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 4 Course Notes: Required - 1. Completion of Bloodborne Pathogens and HIPAA Training online. Information given at orientation. 2. Negative 2-step TB (tuberculosis) skin test within the last year. 3. Students MUST pass an ICHAT criminal background check prior to worksite placement. Information given at orientation. 4. Additional arranged hours are required for online discussion board.
CHSE131	Electronic Hlth Records Intro	2	This course introduces students to the Electronic Health Record (EHR) and its impact on health career-related job responsibilities. Through hands-on experience, students gain an awareness of how EHRs are used in different healthcare settings and how they change the nature of the work performed by individuals throughout the health care field. (F,Sp) Prerequisite Course: Minimum 2.5 in CHSE 120 or concurrently. Placement Scores: Reading Level 5 and Writing Level 4
CHSE136	EKG Technician	3	This course teaches the theory and skills to perform process and explain electrocardiography and holter monitoring. Anatomy, physiology, pathology, and basic cardiac rhythm recognition is presented. Hands-on instruction and practice are included. Successful students may become certified through the American Certification Agency for Healthcare Professionals and/or the Cardiovascular Credentialing Institute. (F,Sp) Prerequisite Course: Minimum 2.5 in CHSE 120 or concurrently Placement Scores: Reading Level 5 and Writing Level 4
CHSE139	Community Health Career Topics	.25 to 8	This course offers students the opportunity to learn new community health career skills and knowledge. Specific up-to-date content will vary with each seminar and will be related to the community health careers. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHSE143	Phlebotomy Technician	2	This course is designed to prepare a person to function as a phlebotomy technician. It will provide the knowledge and skill necessary to safely and skillfully ensure patient identification, obtain a blood sample from a patient, and properly handle specimens after collection. The course includes lecture and campus laboratory. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4 Course Notes: Required - Completion of Bloodborne Pathogens Training online. Information will be distributed via the course D2L site and/or in class. $33 of the course fee is for a medical kit and is non-refundable.
CHSE144	Phlebotomy Externship	4	This course is designed to enable the student to apply procedures learned in CHSE 143, Phlebotomy Technician, to a clinical laboratory setting. While at the worksite (clinical laboratory), students will be under the supervision of a preceptor. The course includes required lectures which cover professionalism, resume writing, and interviewing skills; a practical review of techniques; and worksite experience. (F,Sp,Su) Prerequisite Course: Minimum 2.5 in CHSE 143 within 1 year. Program Approval required. Placement Scores: Reading Level 5 and Writing Level 4 Course Notes: Required - 1. Completion of Bloodborne Pathogens and HIPAA Training online. Information given at orientation. 2. Negative 2-step TB (tuberculosis) skin test within the last year. 3. Students MUST pass an ICHAT criminal background check prior to worksite placement. Information given at orientation. 4. Additional arranged hours are required for online discussion board. $5 of the course fee is for a medical kit and is non-refundable.
CHSE145	Sterile Processing Tech I	5	This course introduces individuals to basic skills needed in the Sterile Processing Department of health care facilities. Duties include processing of patient care equipment, supplies, and instruments for use in all departments. It also includes principles and practices of decontamination, cleaning, disinfection, sterilization, and distribution of medical/surgical supplies. Clinical component is included. (F,Sp) Prerequisite Course: Minimum 2.5 in CHSE 120 or concurrently Placement Scores: Reading Level 5 and Writing Level 4 Course Notes: Required: 1. Completion of Bloodborne Pathogens & HIPAA Training online. Information given at first class session. 2. Negative 2-step TB (tuberculosis) skin test within the last year. 3. Students must pass an ICHAT criminal background check prior to clinical placement. Information given at first class session.
CHSE148	Sterile Processing Externship	3	This course prepares individuals to function competently in the Sterile Processing Department in hospitals. It builds on the principles and practices taught in CHSE 145 and includes discussion of professional work-place skills, resume writing, and interviewing skills, as well as on-the-job training and hands-on practice in a hospital. Successful completion of the course qualifies a student to take the National Certification Examination for Sterile Processing and Distribution. (F, Sp) Prerequisite Course: Minimum 2.5 in CHSE 145 Placement Scores: Reading Level 5 and Writing Level 4 Course Note: Required: 1. Completion of Bloodborne Pathogens & HIPAA Training online. Information given at first class session. 2. Negative 2-step TB (tuberculosis) skin test within the last year. 3. Students must pass an ICHAT criminal background check prior to clinical placement. Information given at first class session.
CHSE150	CHSE Directed/Indep Study	.25 to 4	This course is designed to update, enhance, or remediate knowledge, skills, and competencies for the returning Community Health Services Education student through evaluation of previous learning, self-study, lecture/lab sessions, and/or scheduling into a supervised clinical component. A learning contract specifying objectives, activities and outcomes is required. (As Needed) Prerequisite Course: Program Approval is required. Placement Score: None
CHSE151	Patient Care Technician	6	This course prepares the Certified Nurse Assistant (CNA) to be a Patient Care Technician (PCT) in a hospital or other acute care setting, adding to a student's previous training in a long-term care setting. Specific knowledge, skills, and training required to deliver safe basic patient care are covered (i.e., personal needs, phlebotomy, EKG). Successful completion of this course provides eligibility to take the National Certified Patient Care Technician (NCPCT) exam. (F,Sp) Prerequisite Course: Minimum 2.5 in CHSE 108 within one year or current CNA Certification and Program Approval. Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4 Co-Requisite Course: NCHE 102 Course Notes: Provides training for national PCT certification and hospital. Required - 1. Completion of Bloodborne Pathogens, HIPAA & Sparrow online training; information given first day of class. 2. Negative 2-step TB (tuberculosis) tests within the last year. 3. Students must pass an ICHAT criminal background check. ICHAT to be completed on first day of course (credit card required.) 4. Proof of required immunizations. 5. Students MUST meet physical requirements for the duration of course as specified in course syllabus. $55 of the course fee is for a medical kit and is non-refundable

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CHSE235	Pharmacy Technician	4	This course is designed to introduce students to the skills necessary for a pharmacy technician position in a hospital or retail pharmacy. Students will be prepared to function with knowledge and accuracy in dispensing and control of drugs in either setting. Successful completion prepares students to take the Pharmacy Technician Certification Board National Certification Exam. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4
CHSE236	Pharmacy Technician Externship	3	This externship experience introduces the student to the skills necessary to perform the function of a pharmacy technician relative to prescription review, an introduction to prescription software, label preparation, and product selection during a hands-on activity in a live pharmacy environment. Students will be under preceptor supervision while at a hospital or community pharmacy. Students are rquired to attend lectures which cover professionalism, resume writing, and interviewing skills. (F,Sp) Prerequisite Course: Minimum 2.5 in CHSE 235 within 1 year. Program Approval required. Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4 Course Note: Required - 1. Completion of Bloodborne Pathogens and HIPAA Training online. Information given at orientation. 2. Negative 2-step TB (tuberculosis) skin test within the last year. 3. Students MUST pass an ICHAT criminal background check prior to worksite placement. Information given at orientation. 4. Additional arranged hours are required for online discussion board.
CITA110	Intro to Microsoft Office	3	This course provides an introduction to MS Office. It is designed to develop basic operational proficiency while using Microsoft Office (Word, Excel, Access, and PowerPoint). Students learn how to use word processing, spreadsheet, database, and presentation software. Topics include creating business letters, business memos, elementary spreadsheets, elementary database structures, and slide presentations. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 4 Recommended: Windows and keyboarding experience Course Notes: Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and have a SAM Cengage account. Mac computers are not recommended, but if they are used, desktop virtualization of the Windows environment is required. Equipment and software is provided for students that wish to complete assignments at student computer labs located at Main, West, or East Campuses. Office 365 is available to LCC students at no cost using links from the College website.
CITA115	Microsoft PowerPoint	3	This course introduces students to the fundamental features of Microsoft PowerPoint. Topics include creating presentations using themes, graphic elements, interactive elements and animation effects. Students will prepare presentations for distribution in a variety of formats. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 4 Recommended: Windows and keyboarding experience Course Notes: Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and a MyItLab for Office 2016 account. Mac computers are not fully compatible and are not recommended. Equipment and software is provided for students that wish to complete assignments at student computer labs on Main, West or East Campuses. Office 365 is available to LCC students at no cost using links from the College website. **MyLabIT: You only need to purchase one MyLabIT 2016 account that can be used for CITA115 PowerPoint, CITA133 Access, CITA126 Excel, and CITA226 Advanced Excel. CITA119 Word and CITA219 Advanced Word require a separate MyLabIT 2016 account. An e-book that covers all the classes listed above comes with MyLabIT from the MBS bookstore so a print book is optional if you have a second monitor or device for using your e-book while you work.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITA119	Microsoft Word	3	This course introduces students to the fundamental features of Microsoft Word. Major topics include formatting text; creating footnotes, lists, tables, columns, newsletters and charts; inserting graphics; and exposure to mail merge. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 4 Recommended: Windows and keyboarding experience Course Notes: 1) Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and a MyLabIT for Office 2016 account. Mac computers are not fully compatible and are not recommended. Equipment and software is provided for students that wish to complete assignments at student computer labs located on Main, West, and East campuses. Office 365 is available to LCC students at no cost using links from the College website. **MyLabIT: You only need to purchase one MyLabIT 2016 account that can be used for CITA119 Word and CITA219 Advanced Word. CITA115 PowerPoint, CITA133 Access, CITA126 Excel, and CITA226 Advanced Excel courses require a separate MyLabIT 2016 account. An e-book that covers both CITA119 and CITA219 comes with MyLabIT from the MBS bookstore so a print book is optional if you have a second monitor or device for using your e-book while you work. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITA126	Microsoft Excel	3	This course provides introductory through intermediate level training in Excel spreadsheets. Instruction includes creating worksheets and charts, using formulas and functions, creating Subtotal and PivotTable reports, and working with multiple worksheets. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 5 Recommended: Windows and keyboarding experience Course Notes: 1) Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and a MyLabIT for Office 2016 account. Mac computers are not fully compatible and are not recommended. Equipment and software is provided for students that wish to complete assignments at student computer labs located on Main, West, and East campuses. Office 365 is available to LCC students at no cost using links from the College website. **MyLabIT: You only need to purchase one MyLabIT 2016 account that can be used for CITA115 PowerPoint, CITA133 Access, CITA126 Excel, and CITA226 Advanced Excel. CITA119 Word and CITA219 Advanced Word require a separate MyLabIT 2016 account. An e-book that covers all the classes listed above comes with MyItLab from the MBS bookstore so a print book is optional if you have a second monitor or device for using your e-book while you work. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITA133	Microsoft Access Database	3	This course provides introductory through intermediate level training in the creation of database management systems using Microsoft Access. Instruction includes an introduction to Microsoft Access, database creation and maintenance, database querying, the generation of custom forms and reports, and integration of Access with other programs. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 4 Recommended: Windows and keyboarding experience Course Notes: Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and have a MyLabIT for Office 2016 account. Mac computers are not recommended, but if they are used, desktop virtualization of the Windows environment is required. Equipment and software is provided for students that wish to complete assignments at the Main, West or East Campus computer labs. Office 365 is available to LCC students at no cost using links from the College website. Students may request Microsoft Access 2016 from their instructor through the Microsoft Imagine program at no additional cost. **MyLabIT: You only need to purchase one MyLabIT 2016 account that can be used for CITA115 PowerPoint, CITA133 Access, CITA126 Excel, and CITA226 Advanced Excel. CITA119 Word and CITA219 Advanced Word require a separate MyLabIT 2016 account. An e-book that covers all the classes listed above comes with MyLabIT from the MBS bookstore so a print book is optional if you have a second monitor or device for using your e-book while you work.
CITA140	Microsoft Outlook	3	Students will use Outlook to manage typical business office communication needs. The course includes sending and organizing email, creating contacts, managing calendars and scheduling meetings. Students organize and archive data, and use email filters. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 4 Recommended: Windows and keyboarding experience Course Notes: This class requires Microsoft Outlook 2016. Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, and Microsoft Office 2016. Mac users are required to use Windows-based computers or desktop virtualization of the Windows environment for certain parts of the course. Equipment and software is provided for students that wish to complete assignments at student computer labs located at Main, West, and East campuses. Office 365 is available to LCC students at no cost using links from the College website. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITA219	Advanced Microsoft Word	3	This course provides advanced level training using Microsoft Word. Topics include advanced table features, mail merge, creating forms, working with master and subdocuments, embedding and linking objects, and macros. (Sp) Prerequisite Course: Minimum 2.0 in CITA 119 Placement Score: Reading Level 4 Recommended: Windows and keyboarding experience Course Notes: 1) Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and have a MyLabIT for Office 2016 account. Mac computers are not recommended, but if they are used, desktop virtualization of the Windows environment is required. Equipment and software is provided for students that wish to complete assignments at student computer labs located at Main, West, and East campuses. Office 365 is available to LCC students at no cost using links from the College website. **MyLabIT: You only need to purchase one MyLabIT 2016 account that can be used for CITA119 Word and CITA219 Advanced Word. CITA115 PowerPoint, CITA133 Access, CITA126 Excel, and CITA226 Advanced Excel courses require a separate MyLabIT 2016 account. An e-book that covers both CITA119 and CITA219 comes with MyLabIT from the MBS bookstore so a print book is optional if you have a second monitor or device for using your e-book while you work.** 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.

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CITA226	Microsoft Excel-Advanced	3	This course introduces more complex functions and Excel tools used in financial, and statistical analysis. Additional topics include data imports, web queries, share and merge workbooks. Students customize Excel toolbars and automate tasks with macros. Data validation and auditing tools are introduced. This course, together with CITA126, helps prepare for the Excel Microsoft Office Specialist (MOS) exams. (F,Sp,Su) Prerequisite Course: Minimum 2.5 in CITA 126 Placement Score: Reading Level 5 Course Notes: 1) Students must be able to use web browsers and online learning tools including assignment folders, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and extract files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, Microsoft Office 2016 and have a MyLabIT for Office 2016 account. Mac computers are not recommended, but if they are used, desktop virtualization of the Windows environment is required. Equipment and software is provided for students that wish to complete assignments at student computer labs located at Main, West, and East campuses. Office 365 is available to LCC students at no cost using links from the College website. **MyLabIT: You only need to purchase one MyLabIT 2016 account that can be used for CITA119 Word and CITA219 Advanced Word. CITA115 PowerPoint, CITA133 Access, CITA126 Excel, and CITA226 Advanced Excel courses require a separate MyLabIT 2016 account. An e-book that covers both CITA119 and CITA219 comes with MyLabIT from the MBS bookstore so a print book is optional if you have a second monitor or device for using your e-book while you work.** 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITA229	Special Topics in Applications	.25 to 6	This course offers students the opportunity to learn new computer software application skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the information technology professional. (F,Sp,Su) Prerequisites: Determined by Section
CITD120	SQL Concepts	3	This course introduces the student to Structured Query Language (SQL). Topics include relational database concepts, queries, special operators, and the join operation. Students will gain experience in ANSII standard SQL. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: CITF 108 or CITP 110 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITD227	Database Independent Study	.25 to 4	This course includes special research, projects, or other independent study in Database. Students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. Grading criteria and course objectives are determined at the first meeting. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CITD229	Special Topics in Database	.25 to 6	This course offers students the opportunity to learn new Database Management skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the Database professional. (F,Sp,Su) Prerequisite: Determined by Section
CITD250	Database Concepts	3	Students learn the functions of a database management system. The relational model and SQL are used. Normalization and database design are covered. The CODASYL model is discussed and emerging trends are studied. (F) Prerequisite Courses: Minimum 2.0 in [CITF 110 and (CITP 110 or CITP 150)] Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITF108	Microsoft Windows	2	This course is designed to provide students with a broad base of knowledge that is necessary for enhancing PC productivity through the efficient utilization of Microsoft Windows for file, application, and system use and management. Topics include the use of Windows Interface Objects, Utilities, Help features, Multimedia features, Internet features, closely related applications, and Applets. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 3 Course Notes: 1) The course's textbook is based on MS Windows 10 and uses some examples based on MS Office 2016 programs. Online students are expected to already own a Windows 10 computer to complete required course work. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITF110	Intro Computer Info Systems	3	This course provides an introduction to computers, their role in managing business information systems, their influence on society, and their use in personal productivity. It includes a hands-on introduction to major microcomputer tools: word processors, spreadsheets, presentation software, and database management systems. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 Course Notes: 1) Students must be able to use web browsers and online learning tools including drop boxes, discussion boards, and e-mail. They must also have Windows file management skills, including the ability to upload and download files, make folders, move and zip files. This course requires the use of a PC computer running Windows 7 or higher, 4GB Ram, High Speed Internet Connection - 2 Mbit or higher, and Microsoft Office 2016. Mac users are required to use Windows-based computers or desktop virtualization of the Windows environment for certain parts of the course. Equipment and software is provided for students that wish to complete assignments at the Main or West Campus computer labs. Office 365 is available to LCC students at no cost using links from the College website. Students may request Microsoft Access 2016 from their instructor through the Microsoft Imagine program at no additional cost. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITF120	Operating Systems Concepts	3	The course covers what operating systems are, why they exist, what they do, and how they interface with the operators and programmers. Main memory management and processor scheduling are studied along with device and file management. Case studies of current operating systems are studied. (F,Sp,Su) Prerequisite Courses: None Placement Score: Reading Level 5 Recommended: CITF 110 and (CITP 110 or CITP 150) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITF140	Information Technology Ethics	3	This course explores the ethical dilemmas that confront IT professionals. Ethical codes of various organizations will be studied. Students will learn to apply critical thinking skills to the discussion of ethical questions. Topics will include privacy, intellectual property rights, software development, network administration, and the use of the Internet. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
CITF227	Computer Foundations Ind Study	.25 to 4	This course includes special research, projects, or other independent study in a computer foundations area. Students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. Grading criteria and course objectives are determined at the first meeting. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CITF229	Special Topics in Foundations	.25 to 6	This course offers students the opportunity to learn new computer foundational skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the information technology professional. (F,Sp,Su) Prerequisite: Determined by Section

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITF240	IT Project Management	3	This course provides a comprehensive introduction to IT Project Management and covers the basic concepts of project scope, planning, execution, and closure. Students will develop project plans; track to those plans; manage ambiguity and risks; and make changes to the plan. This course covers the objectives for CompTIA Project+ certification. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CITF 110 or CITS 125) Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITF260	Systems Analysis and Design	4	This course presents concepts and techniques used in the development of computer business application systems. The traditional approach for systems development is presented and compared to the approach used in a 4th Generation Environment. Techniques for structured analysis and project management techniques will be used. Recent developments in analysis, including Computer Assisted Software Engineering (CASE) and Object-Oriented Analysis will be introduced. (Sp) Prerequisite Courses: Minimum 2.0 in (CITF 110 and (CITP 110 or CITP 150)) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITN115	IoT & Automation Fundamentals	5	This course provides an introduction to home technology integration with emphasis on the following: computer networking, audio/video, home security, industry standards, home lighting control, HVAC management, water system controls, home access controls and automated home features, low voltage wiring, and user interfaces. All topics are covered in lecture and lab experiments. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4
CITN120	Networking Concepts	3	The student in this course learns the fundamentals of Local Area Networks (LANs) and Wide Area Networking (WAN). Communication standards such as the OSI 7 layer model and the Internet are introduced. Business and consumer use of these technologies will be discussed. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: CITF 110 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITN220	Introduction to Networks	3	This course introduces architecture, structure, functions, components, and models of computer networks, including the Internet. Students examine networking layers, their roles and services, and learn to build and troubleshoot basic LANs. This course follows the objectives for the first course in the Cisco Networking Academy CCNA Routing and Switching curriculum. (F,Sp) Prerequisite Course: Minimum 2.0 in CITS 125 Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: This course is the first in the four-course Cisco Networking Academy sequence preparing students to test for the CCNA-RS certification. It is an accelerated 8-week course in the first half-semester. Students should plan for the extra time required for an accelerated course. We strongly recommend that students enroll in this course at the same time as CITN 225, which takes place during the second half of the semester.
CITN222	Wireless Networking & Security	3	This course provides the student with the ability to understand the fundamentals of RF networks and describe the functionality of WLAN components. Students are provided with the skills to install, configure, secure, and troubleshoot WLAN hardware peripherals and protocols. This course prepares the student for the Certified Wireless Network Technician exam. (F,Sp) Prerequisite Course: Minimum 2.0 in CITS 125 Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
CITN225	Routing & Switching Essentials	3	This course describes the architecture, components, and operations of devices in a small network. Students learn how to configure a router and a switch for basic functionality. This course is the second course in the Cisco Networking Academy CCNA Routing and Switching curriculum, and can lead to Cisco CCENT Certification. (F,Sp) Prerequisite Course: Minimum 2.0 in (CITN 220 within 2 years or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: This course is the second in the four-course Cisco Networking Academy sequence preparing students to test for the CCNA-RS certification. It is an accelerated 8-week course in the second half-semester. Students should plan for the extra time required for an accelerated course. We strongly recommend that students take this course immediately following CITN 220, enrolling in both courses in the same semester.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITN227	Networking Independent Study	.25 to 4	This course includes special research, projects, or other independent study in Networking. Students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. Grading criteria and course objectives are determined at the first meeting. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CITN229	Special Topics in Networking	.25 to 6	This course offers the opportunity to learn new computer networking skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the networking profession. (F,Sp,Su) Prerequisite: Determined by Section
CITN230	Linux/UNIX Operating System	3	The student in this course learns to install, use and administer a Linux operating system, including user account management, network operation, and application software for Linux. Practical hands-on training is used throughout. (F,Sp) Prerequisite Courses: Minimum 2.0 in [(CITF 120 or CITS 125) and (CITN 220 or CITS 225)] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3
CITN239	Special Topics/Networking P/Z	.25 to 6	This course offers the opportunity to learn new computer networking skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the networking profession. This course will be graded on a Pass/Fail basis. (F,Sp,Su) Prerequisite: Determined by Section
CITN240	Scaling Networks	3	This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. This course is the third in the Cisco Networking Academy CCNA Routing and Switching curriculum. (F,Sp) Prerequisite Course: Minimum 2.0 in (CITN 225 within 2 years) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Course Note: This course is the third in the four-course Cisco Networking Academy sequence preparing students to test for the CCNA-RS certification. It is an accelerated 8-week course in the first half-semester. Students should plan for the extra time required for an accelerated course. We strongly recommend that students enroll in this course at the same time as CITN 245, which takes place during the second half of the semester.
CITN244	Securing Networking Devices	3	This course introduces students to basic tasks needed to secure network routers and switches. Students will gain hands-on experience securing Cisco devices. This course covers the objectives of the Cisco Certified Network Associate - Security course (CCNA-S). (F,Sp) Prerequisite Course: Minimum 2.0 in CITN 225 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
CITN245	Connecting Networks	3	This course discusses the WAN technologies and network services required by converged applications in a complex network. This course is the fourth course in the Cisco Networking Academy CCNA Routing and Switching curriculum and can lead to Cisco CCNA Routing and Switching Certification. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (CITN 240 within 2 years or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Course Note: This course is the fourth in the four-course Cisco Networking Academy sequence preparing students to test for the CCNA-RS certification. It is an accelerated 8-week course in the second half-semester. Students should plan for the extra time required for an accelerated course. We strongly recommend that students take this course immediately following CITN 240, enrolling in both courses in the same semester. Students will receive a voucher during this course for the Cisco CCNA-RS Certification Exam.
CITN250	Microsoft Network Server	3	The student in this course learns installation, security, and best administration techniques for Microsoft Windows Servers. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CITF 120 or CITS 125) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3
CITN253	Networking with Windows Server	3	This class features the functionality of networking available in Windows Server. It covers DNS, DHCP, and IPAM implementations, in addition to remote access solutions, such as VPN and Direct Access. It also covers implementation of software-defined networking (SDN) solutions, such as Hyper-V Network Virtualization (HNV) and Network Controller. (F) Prerequisite Course: Minimum 2.0 in CITN 250 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3
CITN256	Identity with Windows Server	3	This class focuses on the identity functionality in Windows Server. It covers the installation and configuration of Active Directory Domain Services (AD DS), in addition to Group Policy. It also covers functionality such as Active Directory Certificate Services (AD CS), Active Directory Federations Services (AD FS), and Web Application proxy implementations. (Sp) Prerequisite Course: Minimum 2.0 in CITN 253 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITN280	IT Security Foundations	3	This course provides a comprehensive introduction to IT security, covering basic concepts of data integrity, confidentiality, and availability, and focusing on relevant threats and countermeasures. Students will be prepared to evaluate Information Security needs of organizations and to develop policies addressing these needs. This course covers the objectives identified for CompTIA Security+ certification. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CITN 220 or CITS 225) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3 Recommended: CITN 230 or CITN 250
CITP110	Intro to Programming - Python	4	Students are introduced to the fundamental techniques for understanding, designing, developing, and testing object-oriented programs through the use of scientific method. Topics include: structured program design; basic programming control structures; algorithm and logic design; functions; classes; methods; random number generators; user interface design; and working with data in files. Students are required to complete computer-based assignments using the Python programming language. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: Students with little or no experience in programming are recommended to take a face-to-face version of this class rather than an online section. For further questions about the course requirements, please contact the Program office at 517-267-6406. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITP130	Intro to Mobile App Devel	3	The course will introduce students to the various platforms and application (apps) in use on mobile devices. Platforms will include Apple iOS, Google Android OS, and others as appropriate. Students will create applications (apps), test, and debug for each platform using specialized development environments. (F, Sp, Su) Prerequisite Courses: Minimum 2.0 in (CITP 110 or CPSC 230 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
CITP140	Software Testing	3	This course is an introduction to software testing and quality assurance. The fundamentals of software testing are covered including test planning, test case design, the types of testing, such as performance and regression. Also covered are test management, automation, and how people and organizational issues affect testing. (F, Sp) Prerequisite Course: Minimum 2.0 in (CITP 110 or concurrently) Placement Scores: Reading Level 5 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
CITP150	Intro to VB.NET Programming	4	This course introduces students to programming concepts through the use of the Visual Basic.NET programming environment. Students learn to develop business applications by designing and creating a user interface and writing the necessary procedures. Students also learn and use logic development tools and object oriented programming terminology and techniques. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CITP 110 or CPSC 230) Placement Scores: Reading Level 5 and Math Level 4
CITP180	Intro to C#.NET Programming	4	Students will use Microsoft Visual Studio .NET to become familiar with the C# .NET programming language by designing, implementing, and testing programming projects. Topics include creating and using methods and classes; inheritance; exception handling, and using controls. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CITP 110 or CPSC 230) Placement Scores: Reading Level 5 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITP190	Intro to Programming in JAVA	4	This course introduces students to basic programming concepts using the Java Programming language. It introduces object-oriented programming methodology and features provided by the Java language. During the course, students will review sound programming practices and learn accepted Java programming procedures. Students will create and modify simple Java applications and applets. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CITP 110 or CPSC 230) Placement Scores: Reading Level 5 and Math Level 4
CITP220	Game Design & Development	2	This course provides a hands-on introduction to special research and projects utilizing Web development and programming skills. Student may enroll to update or enhance knowledge, mastery, and competencies. Specific content may vary with each offering and will be related to gaming, simulation, and software development industries. (F, Sp, Su) Prerequisite Course: Minimum 2.0 in CITP 180 Placement Scores:Reading Level 5 and Writing Level 6 and Math Level 4 Recommended: CITP 150

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITP227	Programming Independent Study	.25 to 4	This course includes special research, projects, or other independent study in Programming. Students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. Grading criteria and course objectives are determined at the first meeting. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores:None
CITP229	Special Topics in Programming	.25 to 6	This course offers students the opportunity to learn new computer programming skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the computer programming profession. (F,Sp,Su) Prerequisite: Determined by Section
CITP230	Mobile App Devel for Android	4	This course teaches students to develop applications (Apps) for mobile devices using either a Windows or an Apple computer. Programming language (SDK Software Development Kit) taught will feature Java for Android Development. Students will create several mobile applications via a popular IDE (Integrated Development Environment) to run on Android devices. (F, Sp) Prerequisite Course: Minimum 2.0 in CITP 130 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
CITP235	Mobile App Devel for Apple	4	This course teaches students to develop applications (Apps) for mobile devices using an Apple computer. Programming language (SDK Software Development Kit) taught will feature C/Objective-C and/or Swift for iOS Development. Students will create several mobile applications via Apple's Xcode (IDE) to run on Apple mobile devices. (F, Sp) Prerequisite Course: Minimum 2.0 in CITP 130 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
CITP240	Advanced Software Testing	3	This course is the second in a sequence of software testing classes. It covers in more detail testing procedures, test management, and testing techniques. Also included are test tools and automation as well as people skills and team composition for a successful quality assurance team. (Sp) Prerequisite Course: Minimum 2.0 in CITP 140 Placement Scores: Reading Level 5 and Math Level 4
CITP250	Advanced VB.NET Programming	4	This course is a second course in the VB.NET programming sequence and leads to the creation of functional Windows and Web based application programs. Topics include writing user requirements, creating test scenarios and test plans, advanced form design, error handlers, data validation, object oriented programming concepts, database access and programming, use of collections and developing help systems. (Sp) Prerequisite Course: Minimum 2.0 in CITP 150 Placement Scores: Reading Level 5 and Math Level 4
CITP280	Advanced C#.NET Programming	4	Students will use Microsoft Visual Studio .NET to become familiar with advanced C#.NET programming concepts including database and web programming. Topics include using threads, database interaction using ADO.Net, interfacing to Crystal Reports, and creating web applications. (F,Sp) Prerequisite Course: Minimum 2.0 in CITP 180 Placement Scores: Reading Level 5 and Math Level 4
CITP290	Adv JAVA Programming for Busn	4	This course introduces advanced Java Programming concepts. Students will use sound programming practices and accepted Java programming procedures. Students will create and modify computer programs as might be encountered in creating Java applications for industry. Topics covered in this course provide a strong preparation for the Sun Certified Programmer Certification. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in [CITP 190 and (CITW 160 or concurrently)] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
CITP295	Programming Internship	3	This internship provides the student with on-the-job experience as a computer programmer. The student is expected to write or maintain programs, test programs, create documentation, and perform analysis. It is designed to be the culmination of the Computer Programmer/Analyst Associate Degree and as final preparation for entering the job market. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required Placement Scores: None
CITS110	Helpdesk Support Specialist	3	This course will teach self-management and soft-skills to provide helpdesk customer service and support including processes and associated technologies in a technical or non-technical environment. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
CITS125	Computer Support: A+ Cert Prep	6	This course provides students with the skills to diagnose and correct problems that computer users encounter. The student receives practical hands-on experience in installing, maintaining, and troubleshooting computer hardware and software while developing their communication skills and professionalism. This course includes the current CompTIA A+ certification exams that are required to receive CompTIA A+ certification. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: Students will receive vouchers during the class for the CompTia A+ Certification exams.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITS170	Basic Electronic for PC Repair	6	This course begins with basic electricity concepts and discusses basic electricity, basic electronics, electric circuits, diodes, transistors, digital devices, and digital circuits. Course work includes lab exercises each week. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Recommended: Math Level 5
CITS176	Computer Troubleshooting	4	This course provides students with the skills necessary to troubleshoot and repair desktop and laptop computers. Students will be instructed in the proper selection and use of the tools needed to perform diagnostics and preventative maintenance on personal computers. The course also stresses the importance of following proper safety and ESD procedures. (Sp) Prerequisite: Minimum 2.0 in (CITS 125 or concurrently) and Reading Level 5 and Writing Level 2 and Math Level 4
CITS225	Networking for PC Technicians	3	This course provides students with the practical skills to setup, maintain, and manage Local Area Networks. Students will receive a comprehensive introduction to networking standards and protocols, networking hardware and software, transmission basics, Internet connectivity, wireless networking, network security, and convergence technologies. This course includes the CompTIA Network+ certification exam. (F,Sp) Prerequisite Courses: Minimum 2.0 in CITS 125 Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 3 Course Note: Students will receive vouchers during the class for the CompTia Network+ Certification exams.
CITS227	Comp Support Indepen Study	.25 to 4	This course includes special research, projects, or other independent study in Computer Support. Students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. Grading criteria and course objectives are determined at the first meeting. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CITS229	Special Topics/Support	.25 to 6	This course offers the opportunity to learn new computer support skills and knowledge. Specific up-to-date content will vary with each offering and will be related to the computer support profession. (F,Sp,Su) Prerequisite: Determined by Section
CITS230	Computer Virtualization	3	This course presents the concepts and techniques used in computer virtualization. The course describes virtualization, hypervisors and virtual machines. Hands-on activities will cover the installation and management of virtual machines in a variety of computing environments. (F) Prerequisite Course: Minimum 2.0 in CITS 125 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 3 Recommended: Minimum 2.0 in CITS 225 or CITN 230
CITS285	IT Professional Internship	2 to 3	Designed to be the culmination of information systems students' associate degree program. It is intended to give the student live work experiences as a specialist in computer systems or support. It is to be taken at the end of the student's curriculum as final preparation for entering the job market. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CITW150	Internet Literacy	3	This course teaches hands-on skills and builds knowledge for Internet professionals. It is designed to explore the potential uses of the Internet for business and communication including the use of email, search engines, discussion boards, and other Internet applications including web page development. This course also discusses the rapidly changing world of the Internet. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Windows familiarity Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITW160	Web Development HTML & CSS	3	This course explores techniques of web page construction using HTML and CSS languages. Students will construct individual web pages using HTML to contain graphics, text, and web forms with presentation controlled by CSS style sheets. Within a team, students will demonstrate their understanding and application of the concepts introduced during the semester. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CITW165	Web Development JavaScript	3	This course explores advanced techniques of web page and website construction using HTML, HTML5, CSS, CSS3, and JavaScript for website behavior. Students will create several W3C compliant web pages that will respond to user input (client-side) via browsers using these technologies. (F,Sp) Prerequisite Course: Minimum 2.0 in CITW 160 Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CITW175	Web Site Management	3	This course presents a comprehensive introduction to web site planning, promotion, security, and legal issues associated with web site management. Students explore web-based communication tools, domain names, web site hosting, shopping cart software and manage an individual web site to demonstrate concepts presented throughout the semester. (F, Sp) Prerequisite Courses: Minimum 2.0 in (CITW 160 or ARTS 173 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Math Level 4
CITW180	Web Development ASP.NET	4	This course provides instruction in building web sites using Microsoft ASP.NET. Students create dynamic, flexible, and interactive web pages that interact with a database. Students explore server controls, validation controls, security issues, user authentication, and manage an individual web site to demonstrate concepts presented throughout the semester. (Sp) Prerequisite Courses: Minimum 2.0 in (CITW 160 and (CITP 150 or CITP 180)) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
CITW185	Web Development PHP & MySQL	4	This course provides instruction in building web sites using PHP scripting language. Students will learn how to create dynamic, flexible, and interactive web pages, connect to and update a MySQL database as well as develop an individual web site throughout the semester. (F, Sp) Prerequisite Courses: Minimum 2.0 in (CITW 160 or ARTS 173 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Math Level 4
CITW227	Web Independent Study	.25 to 4	This course includes special research, projects, or other independent study in computer web skills. Students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. Grading criteria and course objectives are determined at the first meeting. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CITW229	Special Topics/Web	.25 to 6	This course offers students the opportunity to learn new computer web skills and knowledge related to the World Wide Web. Specific up-to-date content will vary with each offering and will be related to the computer web profession. (F,Sp,Su) Prerequisite: Determined by Section
CIVL101	Civil Drafting	3	This course emphasizes plotting land surveying descriptions, traverses, contours, profiles, cross-sections, templates, and the three views required in highway work. Students will learn how to read basic highway plans and make sketches from field notes. (F) Prerequisite Courses: None Placement Scores: None
CIVL110	Density Certification	2	Students will study techniques and equipment used in determining properties of aggregates, concrete and other materials. Each student will receive a density certification card after successfully completing the course. (Sp) Prerequisite Courses: None Placement Scores: None
CIVL120	Surveying	4	Introduces students to surveying technology and the use of the latest equipment. Emphasis is placed on developing skills in operation and the proper handling of high-tech equipment used in the surveying business. Good field work habits and office engineering are covered. (F) Prerequisite Courses: None Placement Scores: Minimum 2.0 in MATH 114 or Math Level 5
CIVL124	Route Survey	4	This course includes surveying computations in such areas as horizontal curves, vertical curves, spirals and data needed for highway construction layout. Also includes work with surveying computation software and fieldwork with total stations. (Sp) Prerequisite Course: Minimum 2.5 in CIVL 120 Placement Score: Math Level 5
CIVL131	Traffic Technology	3	This course introduces basic principles of traffic engineering design, signing and pavement marking, traffic signalization and how these elements are used to improve motorists' safety. Emphasis is placed on the use of these devices in and around construction zones. Basic concepts on traffic flow and capacity analysis will be presented. (F) Prerequisite Courses: None Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CIVL135	Soils Technology	3	Exploring, sampling, testing and evaluating subsurface materials and their effect on construction are covered in this course. Includes an introduction to methods of subsurface drainage, soil classifications and physical properties of soils; and discussion, demonstration and performance with equipment used in density testing. (Sp) Prerequisite Course: Minimum 2.0 in MATH 114 OR Placement Score: Math Level 5
CIVL141	Site Inspection	3	This course introduces students to the principles of construction inspection including safety practices (MIOSHA), legal aspects, reporting, and applicable specifications, codes and standards. (Sp) Prerequisite Courses: None Placment Scores: Reading Level 3 and Writing Level 2 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
CIVL143	Site Dsgn & Layout/Civil Techn	3	In this course, students apply road and land development procedures, and interpret survey data in assembling sets of construction drawings. Topics include developing cross sections, road profiles, and utility layouts. (Sp) Prerequisite Course: Minimum 2.0 in CIVL 101 Placement Scores: None
CIVL170	Special Topics/Civil Tech	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Civil Technology and other related topics. Specific content may vary with each offering and will be related to the Civil Technology Program and profession. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None
CIVL171	Special Topics/Civil Tech P/Z	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Civil Technology and other related topics. Specific content may vary with each offering and will be related to the Civil Technology Program and profession. This course will be graded on a Pass/Fail basis. (F,Sp,Su) Prerequisite: Determined by Section
CIVL225	Civil Tech Independent Study	1 to 4	Students are allowed to undertake special research projects to apply to their professional experience and academic major. A minimum of 48 hours of work per credit is required and the completion of a written project report. This course cannot be audited. (Sp) Prerequisite Courses: None Placement Scores: None Restriction: Civil Technology Majors
CIVL241	Statics/Strength of Materials	4	Structural terminology and concepts are introduced. General behavior of structural members in compression, stress, strain, creep, fatigue, yield, tension, shear, bending and torsion due to different loading conditions are studied. Loads and forces, conditions of stability and equilibrium in structural frames and free body analysis for reactions and member forces are considered. (Sp) Prerequisite Courses: None Placement Scores: Minimum 2.0 in MATH 114 or Math Level 5
CIVL290	Civil Technology Internship	2 to 4	This course provides Civil Technology students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CJUS101	Intro to Criminal Justice	3	An orientation course designed to provide students with a current, coordinated, and comprehensive overview of criminal justice as an institution and as a system. It will emphasize historical, philosophical, constitutional, and organizational perspectives. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS102	Crime Causes and Conditions	3	Why do some individuals pursue a life of crime? This course introduces and analyzes the past, present, and future of criminology. Sociological, psychological, and biological factors are examined to determine their interaction with and impact on criminal behavior. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS103	Criminal Law	3	This course is a study of substantive criminal law. Includes the classification of crimes, common law concepts, elements of specific crimes, and discussion of current trends in criminal law nationally and locally. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (CJUS 101 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CJUS104	Theory of Patrol	3	This course is designed to introduce the student to the concepts and theories of patrol and the delivery of police services. The class will cover areas such as police field operations, community policing, basic field procedures, traffic direction and enforcement, arrest, reports and records. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Recommended: CJUS 101 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS106	Intro to Juvenile Justice	3	This course emphasizes the legal foundation, as defined by Michigan law, upon which the criminal justice practitioner must rely in dealing with the juvenile offender and the juvenile victim. In addition, this course will introduce the student to the juvenile offender. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS126	Juvenile Offenders/Families	3	This course takes an in-depth look at the diverse nature of juvenile offenders and their family backgrounds. Issues impacting juvenile behavior will be discussed including: family dynamics, family as a social system, behavior cycles, drugs, gender, gangs, and other elements of the social environment. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (CJUS 106 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS130	Local Detention	3	This course explains operations of local detention facilities and their unique role in the criminal justice system. Emphasis is placed on Michigan local locked facilities operations which includes jails, 12-24-72 hour facilities and juvenile facilities. Also includes the organization, management, policy environment, and emerging issues confronting American jails. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
CJUS131	Introduction to Corrections	3	An introduction to the agencies and processes within the correctional system. An examination of correctional officer behavior, corrections legislation, the courts, correctional institutions and their operation, and administration. Includes overview of history sentencing, probation, parole, and community corrections. This course is required for the corrections officer vocational certificate. (F,Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS133	Juvenile Residential Services	3	All aspects of court-placement of juveniles in residential facilities will be examined. Staffing and operations of both public and private agencies will be discussed, focusing both on treatment and detention issues. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (CJUS 106 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4
CJUS134	Probation and Parole	3	An introductory level course in probation and parole with a strong emphasis on counseling, interviewing skills, and supervision techniques. Students will also learn the mechanics of writing violation, progress, and pre-sentence reports. (F,Sp) Prerequisite Courses: Minimum 2.0 in (CJUS 101 or CJUS 131 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS135	Legal Issues in Corrections	3	Study of current constitutional, federal and state law as it pertains to penal institutions, inmates, and correctional employees. The course will provide students with insight into policy considerations behind state and federal law, legal process, court decisions, and inmate rights. This course is required for the correctional officer vocational certificate. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (CJUS 130 or CJUS 131 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CJUS201	Criminal Justice Org/Admin	3	This course examines the primary concepts of criminal justice organization and administration emphasizing processes and theories, communications, leadership, personnel, budgeting, planning, information management, and community relations. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in CJUS 101 Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS203	Criminal Procedure	3	This course is a study of criminal procedural law. It will include laws of arrest, search and seizure, and admissions and confessions; suspect identification; and rules of evidence. (F,Sp) Prerequisite Course: Minimum 2.0 in CJUS 103 Placement Scores: Reading Level 5 and Writing Level 4
CJUS204	Criminal Investigation	4	This course examines the fundamentals of criminal investigation such as crime scene procedures, collection and preservation of physical evidence, interviewing, interrogation, and latent investigation. (F,Sp) Prerequisite Course: Minimum 2.0 in CJUS 101 Placement Scores: Reading Level 5 and Writing Level 4 Recommended: Minimum 2.0 in CJUS 103 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS205	Policing into the 21st Century	3	This course describes who the police are, what they do, and how they do it. It will list the jobs available in policing, how to go about getting them, what skills are needed, and what you do when you get those jobs. It will prepare students for the challenges of policing into the 21st Century. (F,Sp) Prerequisite Course: Minimum 2.0 in CJUS 101 Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS207	Digital Evidence/1st Responder	3	This course is designed to acquaint students with the relationship of the ever evolving world of technology and the impact it plays within our society upon crime. This course emphasizes the various uses of technology and the activity of information that can be used to engage in criminal behavior. Students will be able to identify digital evidence that can be stored, received, and transmitted on electronic devices. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Recommended: Minimum 2.0 in CJUS 101 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS210	Intro to Forensic Science	3	Forensic Science is the application of scientific methods in the analysis of physical evidence generated by criminal activity. This introductory course will cover four major aspects of physical evidence from actual criminal cases including crime scene investigation; the collection, preservation and value of physical evidence; the forensic analysis of physical evidence; and expert testimony. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS242	Unarmed Defense	3	Hands-on techniques to prepare students to properly and effectively handle law enforcement related physical confrontations. It will include use of force decision-making skills, pressure points, control holds, and handcuffing. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None Course Note:The $39 Course Fee is non-refundable.
CJUS245	Report Writing/Crim Justice	3	This course is designed to meet the needs of criminal justice writing. Components include grammar, punctuation, sentences, paragraphs, styles of writing, and proper documentation of work effort. The course includes frequent writing practice. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in ((CJUS 101 or CJUS 131) and (CJUS 103 or CJUS 135)) Placement Scores: Reading Level 5 and Writing Level 4
CJUS247	Juvenile Justice: Special Pops	3	The course provides an in-depth examination of special populations of juvenile delinquents. Attention will be focused on the issues and practices of providing treatment to female delinquents, juveniles in the mental health system, youthful offenders, and juvenile sexual offenders. (Sp) Prerequisite Courses: Minimum 2.0 in (CJUS 101 and CJUS 106) Placement Scores: Reading Level 5 and Writing Level 4 Recommended: Minimum 2.0 in (CJUS 126 and HUSE 110 and PSYC 200)

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CJUS250	Correctional Institutions	3	This course examines the historical development of corrections institutions in the United States. The organizational structure, purpose, programs, security aspects, and prisoner due-process rights, as well as the future of institutions will be examined. This course is required for the correctional officer vocational certificate. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (CJUS 131 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS251	Correctional Clients	3	Emphasis is placed on the needs, identities and development of the recipient of correctional services. Students will gain insight into the behavior and motivations of the corrections client and learn intervention strategies. This course is required for the correctional officer vocational certificate. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (CJUS 130 or CJUS 131 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS255	Human Relations/Crim Justice	3	This course focuses on understanding those aspects of interpersonal relations most directly linked to attainment of organizational and individual goals in work settings. This course is required for the correctional officer vocational certificate. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (CJUS 101 or CJUS 130 or CJUS 131) or concurrently Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
CJUS270	Police Academy I	11	Police Academy I is the basic training required for all police officers in the State of Michigan. The training is certified through the Michigan Commission on Law Enforcement Standards. (F,Sp) Prerequisite: Admission to the Police Academy Co-Requisite Courses: CJUS 271 and PFFT 114 and PFHW 100 Course Note: $400 of the Course Fee is non-refundable.
CJUS271	Police Academy II	14	Police Academy II is the basic training required for all police officers in the State of Michigan. The training is certified through the Michigan Commission on Law Enforcement Standards. (F, Sp) Prerequisite: Admission to the Police Academy Co-Requisite Courses: CJUS 270 and PFFT 114 and PFHW 100
CJUS272	Local Corrections Academy I	5	This course is designed to provide entry level skills for the person who wishes to enter the job market as a Local Correctional Officer at a Sheriff's Department or Local Police Detention Center. Topics include prisoner admittance, diversity, ethics, security, and correction report writing. This meets the Michigan Sheriff Coordinating and Training Council requirements. (F, Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Co-Requisite(s): CJUS 273 Course Note: The $60 Course Fee is non-refundable.
CJUS273	Local Corrections Academy II	3	This course is designed to provide entry level skills for the person who wishes to enter the job market as a Local Correctional Officer at a Sheriff's Department or Local Police Detention Center. Topics will include fire response, mental reactions, and prisoner resistance and restraint. This meets the Michigan Sheriff Coordinating and Training Council requirements. (F, Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Co-Requisite(s): CJUS 272 Course Note: The $240 Course Fee is non-refundable.
CJUS281	Directed Independent Study	1 to 3	Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments that will introduce them to research procedures and resources. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
CJUS285	Law Enforcement Internship	2	Students are required to complete 128 hours of work in an approved law enforcement environment. Written reports are required describing their experiences. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: Department approval requires a completed application submitted to the Public Service Careers Office. Students must bring their driver's license and medical insurance card with application. Worksite placement must be discussed and assigned by instructor. Students will be notified by phone upon approval to register for class.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CJUS286	Juvenile Internship I	3	The student will be placed in a local program dealing with young people from at risk populations. A classroom component includes preparation for job interviews and other skill-building exercises for working in the juvenile justice field. Written reports are required. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in CJUS 106 or concurrently and Department Approval Placement Scores: None Course Note: Department approval requires a completed application submitted to the Public Service Careers Office. Students must bring their driver's license and medical insurance card with application. Worksite placement must be discussed and assigned by instructor. Students will be notified by phone upon approval to register for class.
CJUS287	Juvenile Internship II	3	The student will be placed in a residential facility with juveniles who have been adjudicated by the court for treatment and rehabilitation purposes. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in CJUS 286 and (CJUS 133 or concurrently) and Department Approval Placement Scores: None Recommended: For Juvenile Justice/Juvenile Specialization students Course Note: Department approval requires a completed application submitted to the Public Service Careers Office. Students must bring their driver's license and medical insurance card with application. Worksite placement must be discussed and assigned by instructor. Students will be notified by phone upon approval to register for class.
CJUS288	Corrections Internship	2 to 4	The student will be placed in a local or state corrections facility that will allow him or her to experience many facets of correction operations. Weekly written reports are required and periodic meetings are mandatory. A minimum of 160 hours is required. (F,Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: Department approval requires a completed application submitted to the Public Service Careers Office. Students must bring their driver's license and medical insurance card with application. Worksite placement must be discussed and assigned by instructor. Students will be notified by phone upon approval to register for class.
CJUS295	Criminal Justice Special Topic	.25 to 8	This course offers students the opportunity to learn new criminal justice career skills and knowledge. Specific up-to-date content will vary with each topic presented and will be related to criminal justice careers. (F,Sp,Su) Prerequisite: Determined by Section
COMM110	Communication in the Workplace	3	Introduction to oral communication skills in business and technology. Students will learn to interact effectively in diverse workplace situations. Activities include participating in interviews, managing group dynamics, giving planned presentations, and using current technology to enhance business communication. A grade of 2.0 or higher fulfills the Communication Core Requirement. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Internet access may be needed for quizzes or other assessments in the course.
COMM120	Dynamics of Communication	3	This course is a survey of communication theories and concepts related to interpersonal, small group, public speaking, and mass and social media. Students will learn about media and channels used to interact, the influence of technology on those channels, and sociological, psychological, and practical applications of the communication discipline. A grade of 2.0 or higher fulfills the Communication Core Requirement. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) Internet access may be needed for quizzes or other assessments in the course. 2) Online students need to be able to record and submit videos. 3) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.
COMM130	Fund of Public Speaking	3	Helps beginning speakers develop skills and confidence needed to speak effectively to audiences in public situations. Students learn proper techniques for researching, developing, organizing, outlining, and delivering effective informative, panel and persuasive presentations. At the same time they learn interpersonal concepts that affect their work in group presentations. A grade of 2.0 or higher fulfills the Communication Core Requirement for curricula effective Fall 2003 or later. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) Formerly SPCH 130. 2) Internet access may be needed for quizzes or other assessments in the course.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
COMM140	Interpersonal Communication	3	Introduction to fundamental principles and skills of interpersonal communication. Students investigate techniques for interacting effectively in family, intercultural, and male/female relationships. Class discussions, learning activities, and assignments assist students in examining the impact of their communication on others and in developing effective interpersonal skills. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Internet access may be needed for quizzes or other assessments in the course.
COMM260	Nonverbal Communication	3	Introduction to the ways people communicate without words. Students investigate nonverbal communication theory and research and learn the messages that gestures, facial expressions, vocal cues, physical appearance, clothing, touch, distance, and time convey in American and foreign cultures. Students' nonverbal communication skills are enhanced through assignments and in-class learning activities. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Formerly SPCH 260.
COMM270	Mass Communication	3	Introduction to broadcast, film, and print media and their impact on the individual and society. Students investigate theory and research on topics including values the media convey, media stereotypes, violence, news, advertising, and the role of media in political campaigns. Assignments and observational projects help students become enlightened media consumers. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Formerly SPCH 270.
COMM280	Intercultural Communication	3	Introduction to the theory and practice of successful intercultural communication. Students investigate how communication is affected by dimensions of cultures, cultural values, world views, relationships, and social institutions. Students will become ethical and skillful intercultural communicators. A grade of 2.0 or higher fulfills the Global Perspectives and Diversity Core requirement for curricula effective Fall 2005 or later.(F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) Internet access may be needed for quizzes or other assessments in the course. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
COMM295	Independent Study in COMM	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp) Prerequisite: Department Approval Course Note: Formerly SPCH 295.
CPSC131	Numerical Methods and MATLAB	3	This course uses spreadsheets, MATLAB, and numerical methods for technical problem solving in engineering, mathematics and science. Develops and uses mathematical models combining computation, visualization, data representation, curve fitting, analysis, and programming to allow problem solving in many different areas with emphasis on engineering systems. Uses team-based projects to apply principles. (F,Sp) Prerequisite Courses: Minimum 2.0 in MATH 151 or MATH 161 or concurrently Placement Scores: Reading Level 5 and Writing Level 6
CPSC230	Algorithms and Computing w/C++	4	This course establishes fundamental computational techniques required for continuing study in computer science. Students design, implement and test C++ programs to solve a wide range of problems. Topics include program development, functions, control structures, text file operations, data types/classes, recursion, STL string/vector classes, arrays, and pointer variables. Object orientation and data abstraction/information hiding is emphasized. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (MATH 151 or MATH 161) or concurrently Placement Scores: Reading Level 5 and Writing Level 6
CPSC231	Computing and Data Structures	4	Data abstraction and related theory for representation and access of information using C++. Algorithms and abstract data structures such as linked lists, the stack, queue, binary search tree, heap and priority queue are studied. (F,Sp) Prerequisite Course: Minimum 2.0 in CPSC 230 Placement Scores: Reading Level 5 and Writing Level 6
CPSC260	Computer Science Structures	4	Introduction to logical and algebraic structures and techniques required for further study in computer science. Topics include statement logic and proof techniques, combinatorics, algorithms and their analysis, directed and undirected graphs and their matrix representations, Boolean algebras and logic networks, regular expressions, finite-state machines, and Turing machines. (Sp) Prerequisite Courses: Minimum 2.0 in CPSC 230 and (MATH 151 or MATH 161) or concurrently Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
CSEM100	Computer Related Seminar	.25 to 5	This course will cover a variety of topics in computer related fields. For individuals already employed in the environment seeking to upgrade their skills or anyone looking to be employed in a particular career field. (F,Sp,Su) Prerequisite: None
DANC101	Beginning Ballet	2	Designed for the student with no dance experience. Included are an overview of Ballet history, basic barre and center floor combinations, alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning student.(F,Sp) Prerequisite Course: None Placement Scores: None
DANC102	Beginning Modern	2	Designed for the students with no dance experience. Basic examination of the history of Modern dance, alignment techniques, spatial relationships, and elementary combinations will be explored. Some improvisation will be used throughout the course to assist in developing kinesthetic, spatial, cognitive, and physical awareness. (F,Sp) Prerequisite Course: None Placement Scores: None
DANC103	Beginning Jazz	2	Designed for the student with no dance experience. Included are an overview of Jazz history as well as vocabulary. Basic alignment, isolations, steps, combinations, and rhythms are explored in addition to spatial relationships for the beginning student.(F,Sp) Prerequisite Course: None Placement Scores: None
DANC104	Beginning Tap	2	Designed for the student with no dance experience. Included are an overview of Tap history, as well as vocabulary. Basic steps, combinations, and rhythms are explored in addition to spatial relationships for the beginning student. (F,Sp) Prerequisite Course: None Placement Scores: None
DANC105	Beginning Jazz-Summer	1	Designed for the student with no dance experience. Included are an overview of Jazz history as well as vocabulary. Basic alignment, isolations, steps, combinations and rhythms are explored in addiion to spatial relationships for the beginning student. (Su) Prerequisite Courses: None Placement Scores: None
DANC107	Beginning Ballet-Summer	1	Designed for the student with no dance experience. Included are an overview of Ballet history, basic barre and center floor combinations, alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning dance student. (Su) Prerequisite: None
DANC161	Dance Repertory	.25 to 1	This course is designed for the student who has reached a level of dance technique that will adequately support his/her participation in the concert process. This process includes auditions, rehearsals, and public performances in various dance genres. Concentration is on memorization, projection, musicality, dance ability, and cooperation. (Sp) Prerequisite: Department Approval after successful audition Co-Requisite: Approved students must be registered in one LCC Dance Technique class. Auditing only permitted for intermediate classes.
DANC201	Intermediate Ballet	3	A continuation of beginning ballet. This course includes alignment training, spatial relationships, practice of movement qualities, and longer combinations. Intermediate concepts in Ballet history are explored. Emphasis is placed on dance dynamics, vocabulary, and development of a personal movement style. Pointe shoes are optional with instructor approval. (F,Sp) Prerequisite Courses: Minimum 3.5 in DANC 101 or Dance Audition for Intermediate Ballet Placement Scores: None
DANC202	Intermediate Modern	3	A continuation of beginning Modern. This course includes alighnment training, spatial relationships, improvisation, practice of movement qualities, and longer combinations. Intermediate concepts in choreography and Modern history are explored. Emphasis is placed on dance dynamics, vocabulary, and development of a personal movement style. (Sp) Prerequisite: Minimum 3.5 in DANC 102 or Dance Audition for Intermediate Modern
DANC203	Intermediate Jazz	3	A continuation of beginning Jazz. The course includes alignment training, isolations, spatial relationships, practice of movement qualities, and longer combinations. Intermediate concepts in choreography and Jazz dance history are explored. Emphasis is placed on dance dynamics, vocabulary, and development of a personal movement style. (Sp) Prerequisite: Minimum 3.5 in DANC 103 or Dance Audition for Intermediate Jazz
DANC204	Intermediate Tap	3	A continuation of beginning Tap. This course includes alignment training, spatial relationships, practice of movement qualities, and longer combinations. Intermediate concepts in choreography and Tap history are explored. Emphasis is placed on dance dynamics, vocabulary, increased complexity in rhythms and development of a personal movement style. (F,Sp) Prerequisite: Minimum 3.5 in DANC 104 or Dance Audition for Intermediate Tap

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
DANC207	Intermediate Ballet-Summer	1.5	A continuation of beginning Ballet. This course includes alignment training, spatial relationships, practice of movement qualities, and longer combinations. Intermediate concepts in choreography and Ballet history are explored. Emphasis is placed on dance dynamics, vocabulary, and development of a personal movement style. Pointe shoes are optional with instructor approval. (Su) Prerequisite Courses: Minimum 3.5 in DANC 101 or Dance Audition for Intermediate Ballet Placement Scores: None
DANC290	Dance Studio Internship	2	Designed for dance students to work with a local professional dance company and or dance school. Opportunities may include advanced dance classes with company members, learning company choreography, experiencing teaching methodologies, and exposure to business aspects of a studio and administrative processes. (F,Sp) Prerequisite Courses: None. Department Approval Required Placement Scores: None Course Note: For information, call the Business, Communication and the Arts Office at 517-483-1546.
DCTM100	Intro to the Built Environment	3	This course covers concepts in the fields of Architecture, Building Trades, Construction Management, Energy Management, and Civil Technology. Students are guided through the entire process of building construction starting with design and surveying and finishing with the completion of construction and the commissioning process. Topics include properties of air and moisture, heat flows, structural integrity, and materials. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: This course replaces the following courses: AEET 102, ARCH 100, BLDT 100 and CIVL 100.
DCTM101	Drafting/Intro to CAD	3	This course introduces manual and computer drafting used in the building, design and construction industry. Emphasis will be on industry standards of basic drafting procedures, knowledge, and accuracy using traditional manual techniques and multiple CAD software packages. Introduction and creation of two and three-dimensional images used in various disciplines. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: This course replaces the following courses: ARCH 100 and GRET 203.
DCTM102	Industrial/Construction Safety	2	This course covers safety in the industrial workplace and on construction worksites. Included are local, state and federal safety regulations. The focus will be on the prevention of accidents but will teach the correct response if an accident should occur. First aid, CPR/AED certificates will be issued upon successful completion. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Course Notes: 1) This course requires students to be certified in CPR and First Aid as part of the course grade. Training will occur as part of traditional on-campus sections. Online students have the option of attending CPR and First Aid sessions at LCC's West Campus. Students who cannot travel to LCC will need to make other arrangements to become certified. Additional costs may be incurred if the scheduled CPR and First Aid sessions are not used. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website. 3) On-line students CANNOT qualify for the OSHA-10 Certification due to OSHA limitations. Students requiring OSHA-10 Certification should enroll in one of the lab/lecture sections. $11 of the Course Fee is non-refundable.
DCTM103	Codes and Specifications	3	Students will be introduced to codes for the built environment. This course will introduce the process on permits, inspections, reviews process, standards and zoning. The codes referenced will be the Michigan Residential Code and the Michigan Building Code. A basic introduction to plan reading and specification reading will be emphasized. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: 1) This course replaces the following courses: AEET 261, BLDT 277, BLDT 281 and CIVL 142. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
DCTM150	Civil Construction Materials	3	Students will study techniques and equipment used in constructing bridges, highways, industrial facilities, and pipelines to include determination of properties of soils, aggregates, concrete and other bituminous materials. This class includes coverage of methods of sampling and testing materials. (Sp) Prerequisite Courses: None Placement Scores: Minimum 2.0 in (MATH 114 or Math Level 5) and Reading Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
DCTM200	Construction Management I	4	This course introduces basic concepts of construction project management. Upon completion of this course, students will have basic knowledge of construction estimating and accounting, construction planning and scheduling, and construction law. Completion of this class will help the student prepare for the Part I of the Certified Professional Constructor examination. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Minimum 2.0 in (ACCG 101 and (ARCH 113 or ARCH 116) and ARCH 125
DCTM201	Construction Management II	4	This course introduces advanced concepts of construction project management. Upon completion of this course, students will have functional knowledge of construction estimating and accounting, construction planning and scheduling, and construction law. Completion of this class will help the student prepare for the Part II of the Certified Professional Constructor examination. (Sp) Prerequisite: Minimum 2.0 in (DCTM 200 and (MATH 115 or Math Level 6)) and Reading Level 5 and Writing Level 6 Recommended: ARCH 125
DCTM210	MEP Equipment for Buildings	3	Students will learn about mechanical, electrical, plumbing, and fire (MEP) systems in buildings. These systems are becoming increasingly complex and are occupying larger portions of building project work. Students will understand these systems and be able to schedule, estimate, and coordinate them within the general construction process. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106) Recommended: ARCH 113 and DCTM 100
DCTM220	BIM for Construction	4	This course provides practical guidance on project methods and workflows and hands-on labs for implementing Building Information Modeling (BIM) and technology in all phases of the design and construction management process. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106) Recommended: DCTM 210
DENT140	Oral Histology & Embryology	1.5	This course provides an introduction and description of general histology and embryology with emphasis on the microscopic structures of enamel, dentin, pulp, cementum, periodontal ligament, bone, oral mucosa, epithelial attachment and orofacial structures. (F) Prerequisite Course: None. Admission to Dental Hygiene Program. Placement Score: None Co-requisite Courses: DENT 142 and DENT 144 and DENT 146 and DENT 148
DENT142	PreClinical Dental Hygiene	3	This course is offered concurrently with DENT144 to provide dental hygiene students with the introductory knowledge, skills and attitudes to function in the clinical setting and be able to continue in clinical dental hygiene courses. Emphasis is placed on scientific principles and current theory, prevention of disease transmission, ethical and professional treatment of patients, clinical learning preparation, and comprehensive care of the patient. (F) Prerequisite Course: None. Admission to Dental Hygiene Program. Placement Score: None Co-requisite Courses: DENT 140 and DENT 144 and DENT 146 and DENT 148
DENT144	PreClinic Dental Hyg Practice	2	This course is offered concurrently with DENT142 to provide clinical application to basic theories and procedures used in dental hygiene practice. The primary emphasis is on the techniques of instrumentation used in performing diagnostic, preventive and therapeutic services utilized when providing comprehensive patient care. The dental hygiene student will have an opportunity to practice these techniques on manikins and student partners in the clinic. (F) Prerequisite Course: None. Admission to Dental Hygiene Program. Placement Score: None Co-requisite Courses: DENT 140 and DENT 142 and DENT 146 and DENT 148 Course Note: $1,220 of the course fee is for a dental kit and is non-refundable.
DENT146	Head, Neck & Oral Anatomy	3.5	This course provides a detailed study of nomenclature, morphologic characteristics, and physiologic relationships of human primary and permanent teeth Head and neck anatomy is also studied and is related to the clinical practice of dental hygiene. Laboratory activities develop observation and dexterity skills while studying this information. (F) Prerequisite Course: None. Admission to Dental Hygiene Program. Placement Score: None Co-requisite Courses: DENT 140 and DENT 142 and DENT 144 and DENT 148
DENT148	Dental Radiography	3	This course provides a study of radiation physics, hygiene, and safety theories. Emphasis is placed on the essentials of oral radiographic techniques and interpretation of radiographs. Course content includes exposure of intra-oral radiographs, quality assurance, patient selection criteria, anatomical landmarks, radiation characteristics, and biology. (F) Prerequisite Course: None. Admission to Dental Hygiene Program. Placement Score: None Co-requisite Courses: DENNT 140 and DENT 142 and DENT 144 and DENT 146

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
DENT152	Dental Hygiene I	2	This course is a continuation of information designed to provide an opportunity to enhance performance of procedures in a clinical setting. Emphasis will be placed on emergency care, planning dental hygiene care, health promotion and disease prevention, oral rehabilitation and care of appliances, and modifications of dental hygiene care for specific patient populations. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148) Placement Score: None Co-requisite Courses: DENT 154 and DENT 156 and DENT 158 and DENT 161
DENT154	Clinical Dental Hygiene I	2	This course provides an introduction to the clinic and patient, clinical skills, patient assessment, treatment and appointment scheduling, preventive techniques and application of dental hygiene procedures in the clinical setting. Practical experience is simultaneously related to theory. Direct supervision is provided by clinical faculty. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148) Placement Score: None Co-requisite Courses: DENT 152 and DENT 156 and DENT 158 and DENT 161
DENT156	Nutrition	2	This course discusses the identification, function, metabolism, and sources of specific nutrients required for normal growth, development, and repair of oral tissues. Application of principles to the individual's nutritional needs, providing nutritional counseling and diet information to all patients, including special needs patients, and the relationship of nutrition to oral health are emphasized. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148) Placement Score: None Co-requisite Courses: DENT 152 and DENT 154 and DENT 158 and DENT 161
DENT158	Dental Pharmacology	3	A study of the importance of the pharmacologic aspects of those drugs and drug groups with which the dentist and dental hygienist are directly and indirectly concerned. Emphasis is placed on nomenclature, origin, physical and chemical properties, preparation, modes of administration, and effects upon the body systems. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148) Placement Score: None Co-requisite Courses: DENT 152 and DENT 154 and DENT 156 and DENT 161
DENT161	Principles of Periodontics	3	This course provides a study of the normal and diseased periodontium to include the structural, functional, and environmental factors. Emphasis is placed on etiology, pathology, evaluation of disease, treatment modalities, and therapeutic and preventive periodontics relative to the hygienist's role as a co-therapist in a contemporary practice setting. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148) Placement Score: None Co-requisite Courses: DENT 152 and DENT 154 and DENT 156 and DENT 158
DENT174	Clinical Dental Hygiene II	1	This course provides a continuation of clinical skills, patient assessment, treatment and appointment scheduling, preventive techniques and application of dental hygiene procedures. Work-based instruction helps students synthesize new knowledge, apply previous knowledge, and gain experience managing workflow. Practical experience is simultaneously related to theory. Direct supervision is provided by clinical faculty in a clinical setting. (Su) Prerequisite Courses: Minimum 2.5 in (DENT 152 and DENT 154 and DENT 156 and DENT 158 and DENT 161) Placement Score: None Co-requisite Course: DENT 176
DENT176	Dental Materials & Methods	3	This course provides a study of the composition, chemical and physical properties, manipulation, and uses of dental materials. Laboratory experiences include the application and manipulation of various materials used in dentistry. (Su) Prerequisite Courses: Minimum 2.5 in (DENT 152 and DENT 154 and DENT 156 and DENT 158 and DENT 161) Placement Score: None Co-requisite Course: DENT 174
DENT240	Anxiety & Pain Control Mgmt	2.5	This course will provide the student with basic and current concepts of local anesthetics nitrous oxide and pain control for the safe and effective administration of local anesthetics and nitrous oxide/oxygen sedation. Instruction in local anesthetic technique, nitrous oxide technique, and an introduction to the use of nitrous oxide as an analgesia is included. (F) Prerequisite Courses: Minimum 2.5 in (DENT 174 and DENT 176) Placement Score: None Co-requisite Courses: DENT 242 and DENT 244 and DENT 247 and DENT 248
DENT242	Dental Hygiene III	2	This course is a continuing development of a theoretical framework of dental hygiene treatment with advancement of dental hygiene proficiency in all areas of dental hygiene treatment. Case histories from patients are presented and discussed along with preventive measures employed against disease concurrent with clinical practice, with emphasis on special needs patients. (F) Prerequisite Courses: Minimum 2.5 in (DENT 174 and DENT 176) Placement Score: None Co-requisite Courses: DENT 240 and DENT 244 and DENT 247 and DENT 248

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
DENT244	Clinical Dental Hygiene III	3	The clinical sessions combine dental hygiene skills with time management techniques essential for private practice. Comprehensive patient care includes assessment, dental hygiene diagnosis, treatment planning, implementation and evaluation of dental hygiene care, nonsurgical periodontal therapy, ultrasonic instrumentation, patient management, sealants, and comprehensive programs for control of dental diseases. The course consists of faculty supervised patient treatment in the clinic. (F) Prerequisite Courses: Minimum 2.5 in (DENT 174 and DENT 176) Placement Score: None Co-requisite Courses: DENT 240 and DENT 242 and DENT 247 and DENT 248 Course Note: $372 of the course fee is for a medical kit and is non-refundable.
DENT247	Oral Pathology	3	This course is a study of the diseases affecting oral tissues, including the principles of inflammation and repair, developmental and genetic disturbances, oral infections, injuries and neoplasms. (F) Prerequisite Courses: Minimum 2.5 in (DENT 174 and DENT 176) Placement Score: None Co-requisite Courses: DENT 240 and DENT 242 and DENT 244 and DENT 248
DENT248	Dental Public Health & Educ	3	This course provides a study of the principles and concepts of community public health and dental health education. Emphasis is placed on dental epidemiology and statistical methods, community assessment, educational planning, implementation, and evaluation, scientific review of literature, and classroom presentation. (F) Prerequisite Courses: Minimum 2.5 in (DENT 174 and DENT 176) Placement Score: None Co-requisite Courses: DENT 240 and DENT 242 and DENT 244 and DENT 247
DENT252	Dental Hygiene IV	2	This course is a continuation of information to prepare the student for advanced clinical practice. An in-depth study of dental hygiene care for patients with special needs is provided along with an examination of the dental hygienist's role in practice settings and employment considerations. Resume preparation, job interviewing, employment preparation, and an understanding of the law and professional ethics of dental hygiene are covered. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 240 and DENT 242 and DENT 244 and DENT 247 and DENT 248) Placement Score: None Co-requisite Courses: DENT 254 and DENT 256
DENT254	Clinical Dental Hygiene IV	3	The clinical session combines dental hygiene skills with time management techniques essential for private practice. Comprehensive patient care includes assessment, dental hygiene diagnosis, treatment planning, implementation and evaluation of dental hygiene care, nonsurgical periodontal therapy, ultrasonic instrumentation, patient management, sealants, and comprehensive programs for control of dental diseases. The course consists of faculty supervised patient treatment in the clinic. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 240 and DENT 242 and DENT 244 and DENT 247 and DENT 248) Placement Score: None Co-requisite Courses: DENT 252 and DENT 256
DENT256	Community Oral Health	1.5	Students assess, plan, implement, and evaluate a community dental health project. Dental specialties and the dental hygienist's role in recognizing specialty care needed by patients is presented. Each student participates in a variety of community health projects and observing in dental specialty practices. (Sp) Prerequisite Courses: Minimum 2.5 in (DENT 240 and DENT 242 and DENT 244 and DENT 247 and DENT 248) Placement Score: None Co-requisite Courses: DENT 252 and DENT 254
DENT270	Dental Hygiene Board Review	2	This course will provide students with a review of previous DENT course material in order to prepare the student for the National Dental Hygiene Board licensing exam. Students inventory their current knowledge of previously learned program material through a variety of class exercises including: self-assessments & personal study plans, case-based question group reviews, along with on-line available review materials. The course will also emphasize testing techniques and question construction. It will conclude with a mock board examination. (Sp) Prerequisite Course: None. Program approval is required. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 5
DENT280	Dental Special Topics	.25 to 8	This elective course offers students the opportunity to learn skills and knowledge related to dental hygiene. Specific up-to-date course content will vary with each offering and will be related to the dental profession. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
DENT290	Directed Study	.25 to 3	This course provides selection of content from the Dental Hygiene curriculum to update or enhance current knowledge and skill for returning students and health care professionals. Through evaluation of previous learning, examinations, self study, and scheduling into needed lectures and labs, students are advanced-placed or readmitted into the Dental Hygiene Program. (As Needed) Prerequisite Course: None. Program Approval is required. Placement Score: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
DMAC120	Digital Audio Production I	4	In this hands-on, practical application course, students will learn the fundamental concepts of contemporary Audio Production in a computer based (DAW) audio recording editing, and mixing environment. The student will create content that meets modern broadcast and web delivery standards, and gain experience in session and data management. Working from the perspective of an independent engineer/producer, the student will experience a client-based production model, culminating in the creation of deliverable media. Digital Audio Production I is the audio foundation course required of all DMAC students. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
DMAC121	Digital Audio Production II	4	Students will develop skills in computer-based editing, arranging, mixing and publishing of audio programming. Upon successful completion of this course, the student will be well prepared to pursue Pro Tools certification through an Avid training partner facility. (F,Sp) Prerequisite: Minimum 2.0 in (DMAC 120 or MUSC 197) and Reading Level 5 and Writing Level 6
DMAC122	Audio Recording I	4	This course introduces the concepts of multi-track audio recording for music and entertainment production. Students will gain a comprehensive understanding of 1) the audio recording chain, signal path, console design/operation, 2) microphone design and placement to optimize audio recording, 3) application of basic signal processing, and 4) basic studio acoustics. (F,Sp) Prerequisite Courses: Minimum 2.0 in DMAC 120 or MUSC 197 Placement Scores: Reading Level 5 and Writing Level 6
DMAC130	Digital Video Production	4	A hands-on, practical application course, students will learn the fundamental concepts of digital video production. Hands-on classroom exercises will include basic non-linear editing, lighting, videography/cinematography, DVD authoring, and the distribution of digital media. Digital Video Production is the video foundation course required of all DMAC students. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
DMAC131	Digital Cinematography I	4	In this intermediate digital cinematography course, students will learn to use LED, tungsten, HMI, and fluorescent lighting systems, along with grip equipment, to design, shape, bounce, and diffuse light. Students will work hands-on and utilize the tools typically used on productions, including an array of light fixtures, stands, clamps, power distribution, and hardware. (F,Sp,Su) Prerequisite Courses: Minimum 3.0 in DMAC 130 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Students are strongly encouraged to take DMAC 131 and DMAC 132 concurrently.
DMAC132	Video Post-Production I	4	A hands-on course, Video Post-Production I will present the student with an extensive experience in non-linear post-production using a computer-based editing platform. Learning activities within and outside the classroom are designed to provide a technical and creative foundation in the procedures used by video and digital cinema editors. (F,Sp) Prerequisite Courses: Minimum 2.0 in DMAC 120 and DMAC 130 Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Students are strongly encourages to take DMAC 132 and DMAC 131 concurrently.
DMAC140	Pre-Production Design	3	This introductory course focuses on the fundamental concepts of pre-production design. Hands-on classroom exercises will find students creating a variety of pre-production materials including storyboards, scripts, treatments, project request forms, project budget forms, site survey form, pre-production checklist, production schedules, etc. Pre-Production Design is required of all DMAC students. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
DMAC141	Ethics and Impact of the Media	3	This course explores the effects of the Cinema, Television and Mass Media on American culture. Topics such as privacy, censorship, violence, and portrayals of minorities and women are discussed and analyzed. Course discussions occur within an ethical reasoning framework. Ethics and Impact of the Media is required for all DMAC students (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
DMAC222	Audio Recording II	4	An advanced recording course that provides in-depth instruction on signal aquistion, microphone placement techniques for electronic instruments. The student will also receive instruction in complex, DAW based mixing techniques using a DAW Control Surface to create and update mix automation, signal processing and routing, and master audio file output/creation. (F) Prerequisite Courses: Minimum 2.0 in DMAC 121 and DMAC 122 Placement Scores: Reading Level 5 and Writing Level 6
DMAC231	Digital Cinematography II	4	Through hands-on exercises in the studio and on location, students will combine the technical aspects of cinematography including ISO, WB, FPS, shutter angle, resolution, and recording format with the aesthetic considerations of lens choice, framing, composition, camera perspective, and movement to create compelling visual images and engaging visual stories. Students in this class will be utilizing the RED Camera. (Su) Prerequisite Courses: Minimum 3.0 in DMAC 131 Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
DMAC232	Video Post-Production II	4	Video Post-Production II focuses on the advanced technical, creative, and design issues of non-linear editing. Hands-on classroom exercises will include video compositing, color correction, advanced effects, media management, and networking. Based upon these exercises, students will manage and edit several short form projects deliverable in a variety of digital formats. (F) Prerequisite Courses: Minimum 2.0 in DMAC 132 Placement Scores: Reading Level 5 and Writing Level 6
DMAC234	Studio Production Techniques	4	This practical application course focuses on the fundamental concepts of television studio production. Hands-on classroom exercises will find students operating in a variety of production roles including but not limited to director, technical director, camera operator, graphics operator, audio engineering, floor director, etc. (F,Sp) Prerequisite Coursees: Minimum 2.0 in DMAC 120 and DMAC 130 and DMAC 140 Placement Scores: Reading Level 5 and Writing Level 6
DMAC240	Employment Issues in Media	2	This self-exploration course will develop an individual's understanding of media industry issues related to organizational and self employment. Class sessions and assignments contain practical exercises aimed at developing the individual's employability skills. Several guest speakers will be incorporated into the course content. (F,Sp) Prerequisite Courses: Minimum 2.0 in DMAC 120 and DMAC 130 and DMAC 140 Placement Scores: Reading Level 5 and Writing Level 6
DMAC244	Media/Cinema Producer	3	This practical application course focuses on the role and responsibilities of the media/cinema producer. Through collaborative group work, students will produce a variety of "theme based" media/cinema projects. Special emphasis is placed on project development, marketing, distribution, and legal issues. (F,Sp) Prerequisite: Minimum 2.0 in (DMAC 120 and DMAC 130 and DMAC 140) and Reading Level 5 and Writing Level 6
DMAC245	Workshop: Audio	2	A practical production course in which students will, under the supervision of an audio faculty member, create either 1) an informational series of audio programs on topics that are of interest to the regional, local or college community, or 2) a series of dramatic/entertainment vignettes using existing rights-acquired scripts. (F,Sp) Prerequisite Courses: None. Department Approval Required Placement Scores: None
DMAC246	Workshop: Video	2	A practical application course in which students will, under the direct supervision of a faculty member, work as a member of a video production team to create professional video programming. Students may serve in a variety of production roles including videographer, videotape operator, technical director, floor director, etc. (F,Sp) Prerequisite: Department Approval
DMAC260	World Cinema	4	This survey course introduces students to pre-eminent international filmmakers and film movements. World Cinema explores social, political, economic and historical contexts pertaining to film production to create an understanding of the relationship between cinema, story telling and national culture. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
DMAC295	Media/Cinema Portfolio	2	The student will assemble a portfolio under faculty supervision that represents the student's attainment of DMAC program outcomes. The Portfolio created in this course can be used for securing employment or acceptance into a four-year school. This course is intended to be a capstone course in the DMAC curriculum. (F,Sp) Prerequisite Courses: Minimum 2.0 in DMAC 240 and 48 or more credits toward the DMAC degree and Department Approval Required Placement Scores: Reading Level 5 and Writing Level 6
DMAC296	Media/Cinema Internship	3	This course provides an opportunity for students to work in external media or cinema settings under professional supervision. Students work closely with faculty in arranging and evaluating the workplace experience. Placement is contingent upon interview results between the student and interview site. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required Placement Scores: None Restriction: Digital Media and Cinema Majors Only
ECON120	Power, Authority and Exchange	4	A comparative study of ancient and modern economic and political systems and theories in different parts of the world. An emphasis will be placed on the evolution of economic and political organizations and the impact these have on societies and individuals. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ECON201	Principles of Economics-Micro	4	This course is designed to develop objective consideration of economic issues and provides information and understanding of how resources are allocated by prices. Topics for study include price theory, consumer demand, cost and market structure, the role of government in the market, resource pricing, and international trade. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ECON202	Principles of Economics-Macro	4	This course addresses the theory of national income, employment and the price level, and government fiscal and monetary policies designed to influence aggregate economic activity. It also addresses exchange rates, international financial relationships, and economic growth. (F,Sp,Su) Prerequisite Course: ECON 201 or concurrently Placement Scores: Reading Level 5 and Math Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ECON213	U.S. Economic/Business History	3	This course provides a survey of American economic and business history, change, and growth since the colonial period. Topics include an overview of business organization, the role of government and technological change, American industrial development, labor unions, and capitalization patterns. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ECON260	Comparative Economic Systems	3	A comparison of different global economic systems and their impact on economic growth, distribution of income and opportunity, and economic treatment of women and minorities. Theories, philosophies, historical development and current practices will be examined. (Sp) Prerequisite: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
EDUC204	Educational Psychology	3	Educational psychology examines the contribution of psychology to education, emphasizing childhood development, learning, motivation, measurement, and both individual and group dynamics that affect pupils' achievements. Research on specific programs and strategies designed to improve instruction and learning will be explored. This class is designed for potential certified teachers or paraprofessionals. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
EDUC220	Introduction to Education	3	An overview of the foundations, philosophy, history and organization of education as a human endeavor and an introduction to education as a teaching profession. Topics include legal concerns, issues and trends in American education, school governance and school finance. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
EDUC226	Reading in Elementary School	3	This course provides an introduction to concepts and issues in the reading development of elementary school children. Included are methods of reading instruction and assessment, and review of current school practices. Intended for teacher paraprofessionals, but may also be used for transfer to a teacher certification program. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: EDUC 220 and EDUC 204
EDUC228	Technology in Education	3	In this survey course, students will learn sound principles for integrating technology and media into K-12 classrooms, legal and societal issues surrounding their use, and how to assess and select appropriate technology and media. Students will explore uses of productivity/presentation software and the internet/WWW to enhance their teaching. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: EDUC 220 and CPSC 120 or CABS 110
EDUC230	Intro to Special Education	3	An introduction to Special Education for potential elementary or secondary teachers and teacher paraprofessionals. The physical, social, emotional and cognitive characteristics of special needs students are defined. Emphasis is placed on the disability categories addressed in state and federal special education mandates. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
EDUC280	Teacher Education Practicum	3	This course requires students to work with a teacher in an educational setting, thus receiving practical experience working with children in a classroom. Combined with textbook readings, reflections, and on-campus classroom discussion, students should gain an appreciation for the role of professional teachers. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: This course requires 75 additional hours of practical experience in a K-12 classroom. Information on field placement and assignment will be given during the first day of class. All public schools are required to ask for a background check for anyone who regularly visits a K-12 school building. Students in EDUC 280, Teacher Education Practicum, should be prepared to present a completed ICHAT (online State background check) to their practicum site at the beginning of the assignment. Instructions for conducting this online background check may be found at https://www.lcc.edu/as/teachprep/background_check.aspx and click on the link.
ELTA105	Elect. Industry Orientation	0.5	An overview of laws and standards that apply to the electrical construction industry in the State of Michigan. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 3
ELTA106	Basic Electrical Calculations	2	Reviews mathematical concepts required of the electrical technician in his/her study of electrical theory: fractions, ratios, proportions, powers and roots as used in Ohm's and Watt's Laws. Basic right triangle trigonometry, graphing and the reading of a tape measure are also discussed. A basic scientific calculator will be required and used in class. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
ELTA120	AC Fundamentals - Electrician	2	A practical approach to calculations of alternating current circuit quantities that an electrician may be required to use in the electrical trade. Impedance and power relationships will be explored for both single and three-phase circuits. (F, Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 110 or ELTE 108) and [Minimum 2.5 in (ELTA 106 or MATH 114) or Math Level noted below] Placement Scores: Reading Level 4 and Writing Level 2 and Math Level 5 Course Note: $8 of the Course Fee is non-refundable.
ELTA155	Transformer Fundamentals	2	This course covers alternating current transformers. Topics include operating principles, transformer calculations, single phase transformers, three phase transformers, autotransformers, and transformer connections. (F, Sp) Prerequisite Courses: Minimum 2.0 in [ELTE 121 or (ELTA 120 or concurrently)] Placement Scores: Reading Level 4 and Writing Level 2 Course Note: $8 of the Course Fee is non-refundable.
ELTA160	PLC Overview for Electricians	1	This course provides a practical overview of programmable logic controllers with focus on operating principles and installation. Topics include the capabilities, installation, programming, (examine on/off, timers and counters) and connecting of external devices. (F) Prerequisite Courses: Minimum 2.0 in (ELTE 130 or ELTE 131) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: ELTA 160 sections require 2 additional lab hours that need to be arranged with the instructor and ELTE lab staff. It is recommended that students attend the additional instructor led lab period assigned to your specific section. Students who choose to utilize the ELTE open lab times to satisfy the arranged lab time, should be aware that the instructor may not be present during this time to answer questions. $7 of the Course Fee is non-refundable.
ELTA180	Introduction to Fire Alarms	1	This course provides an introduction to the installation and operation of fire alarm systems. Topics covered include: wiring methods, components, circuit types, system types and code rules. (F) Prerequisite Course: Minimum 2.0 in (ELTE 109 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
ELTE102	Industrial/Construction Safety	2	This course covers safety in the industrial workplace and on construction worksites. Included are local, state and federal safety regulations. The focus will be on the prevention of accidents but will teach the correct response if an accident should occur. First aid, CPR/AED certificates will be issued upon successful completion.(F, Sp, Su) Prerequisite Course: None Placement Scores: Reading Level 3 and Writing Level 2 Course Notes: 1) This course requires students to be certified in CPR and First Aid as part of the course grade. Training will occur as part of traditional on-campus sections. Online students have the option of attending CPR and First Aid sessions at LCC's West Campus. Students who cannot travel to LCC will need to make other arrangements to become certified. Additional costs may be incurred if the scheduled CPR & First Aid sessions are not used. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website. 3) Online students CANNOT qualify for the OSHA-10 certification due to OSHA limitations. Students requiring OSHA-10 Certification should enroll in one of the lab/lecture sections. $11 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ELTE104	Employee Worksite Basics	1	This course is designed to prepare students for entering the technical workplace. Students will learn employability skills for entry-level employment in the manufacturing, construction, and utility industries. Upon successful completion of this class, students will be prepared to take the SkillsUSA Energy Industry Employability Skills Assessment.(F) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]
ELTE108	Practical Electricity I	2	ELTE is a foundational course in Direct Current electrical theory. Series, parallel and combination circuits are studied in class. Meters are used in lab to measure and confirm the relationships between voltage, current, resistance, and power in studied circuits.(F, Sp, Su) Prerequisite Courses: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: ELTE 110 (Practical Electricity) has been divided into two courses to allow more flexibility in scheduling. Each course covers half of the ELTE 110 content: ELTE 108 (Practical Electricity I) runs for the first half of the semester and covers the first half of the ELTE 110 content. ELTE 109 (Practical Electricity II) runs for the last half of the semester and covers the remaining ELTE 110 content. Students who take both ELTE 108 and ELTE 109 will fulfill curriculum guide requirements that list ELTE 110 as a requirement. If you have questions, contact the Electrical Program at 517-483-1360. $6 of the Course Fee is non-refundable.
ELTE109	Practical Electricity II	2	This course applies the concepts covered in ELTE 108 (formerly ELTE 118), to conductance in gases and liquids; batteries; magnetism and motor operation. Conductor sizing, basic household wiring, electrical service components and the State of Michigan licensing law are addressed. Combined with ELTE 108, curricular requirements for ELTE 110 are fulfilled.(F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102) or concurrently and Minimum 2.0 in ELTE 108 or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: ELTE 110 (Practical Electricity) has been divided into two courses to allow more flexibility in scheduling. Each course covers half of the ELTE 110 content: ELTE 108 (Practical Electricity I) runs for the first half of the semester and covers the first half of the ELTE 110 content. ELTE 109 (Practical Electricity II) runs the last half of the semester and covers the remaining ELTE 110 content. Students who take both ELTE 108 and ELTE 109 will fulfill curriculum guide requirements that list ELTE 110 as a requirement. If you have questions, contact the Electrical Program at 517-483-1360. $6 of the Course Fee is non-refundable.
ELTE110	Practical Electricity	4	This course introduces the student to electricity on a practical level. The student will learn to use meters to measure electrical quantities, do basic circuit calculations, install basic household electrical wiring and investigate the behavior of motors. Reviews electrical codes and standards. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (ELTA 101 or ELTE 100 or ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and (Math Level 3 or MATH 105 or MATH 106) Recommended: Math Level 4 Course Note: $12 of the Course Fee is non-refundable.
ELTE111	Intro to Industrial Automation	4	Provides a hands-on introduction to computer-based manufacturing through experiments and demonstrations. Topics include computer architecture, operating systems, the internet, text and spreadsheet processing, PLC's, machine vision, programming languages, discrete electronics, computer aided design and network communications. Emphasis placed on the integration of these systems and impact on human lifestyle. (F,Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) and (ELTE 108 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Notes: Student will be required to provide a 2 gigabyte memory stick (jump drive) with a USB port interface. $15 of the Course Fee is non-refundable.
ELTE112	Basic Wiring Installation	2	This course covers installation of a variety of wiring systems in wood frame construction. Students will practice installing nonmetallic sheathed cable, electrical metallic tubing and residential services. (F,Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 109 or ELTE 110 or HVAC 110) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Notes: Students will be required to provide hand tools not included in the course fee. A list of these tools will be provided at the first class meeting. $5 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ELTE121	Electrical Mathematics	5	This course utilizes concepts in algebra, vector algebra and trigonometry to solve DC and AC electric circuit problems. Topics will include units, Ohm's Law, network analysis, series parallel and combination DC and AC circuits, inductance, capacitance, AC power relationships and power factor correction. (Sp) Prerequisite: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102) and (ELTE 110 or ELTE 108) and (minimum 2.0 in MATH 114 or Math Level 5) and Reading Level 5
ELTE122	Industrial Control Electronics	5	This course introduces the student to solid-state circuitry used in industry. Students will study diodes, transistors, SCRs, triacs, optical isolators, transducers, power circuits, etc. Laboratory will include oscilloscope usage. The course also includes an introduction to Boolean algebra and digital circuits. (Sp) Prerequisite Courses: Minimum 2.0 in ((ELTE 108 or ELTE 110) and ELTE 111) Placement Scores: Reading Level 5 and Writing Level 2 and Math Level 5 Recommended: Minimum 2.0 in ELTE 121 or ELTA 120 Course Note: $8 of the Course Fee is non-refundable.
ELTE123	Motors and Transformers	5	This course begins with three-phase circuits, including three-phase power measurement. Contains practical introduction to single- and three-phase transformers, motors and alternators. Brief coverage of DC machines. (F) Prerequisite Course: Minimum 2.0 in ELTE 121 Placement Scores: Reading Level 5 and Writing Level 2 and Math Level 5 Course Note: $10 of the Course Fee is non-refundable.
ELTE129	Machine Controls I - A	2	This course covers the first half of ELTE 131 and ELTE 130 will cover the second half. Together they emphasize relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Laboratory exercises include an exploration of three phase power systems; wiring three-phase motor control circuits utilizing two- and three- wire control; interfacing with fluid power control circuits; non-contact sensors; and timers. Troubleshooting skills are emphasized throughout the course.(F)br> Prerequisite Courses: Minimum 2.0 in (ELTE 108 or ELTE 110 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: $8 of the Course Fee is non-refundable.
ELTE130	Machine Controls I - B	2	This course covers the second half of ELTE 131 and ELTE 129 covers the first half. Together they emphasize relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Laboratory exercises include an exploration of three phase power systems; wiring three-phase motor control circuits utilizing two- and three- wire control; interfacing with fluid power control circuits; non-contact sensors; and timers. Troubleshooting skills are emphasized throughout the course. (Sp) Prerequisite Course: Minimum 2.0 in (ELTE 129 or concurrently) Placement Scores:Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $8 of the Course Fee is non-refundable.
ELTE131	Machine Controls I	4	Covers relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Laboratory exercises include wiring three-phase motor control circuits utilizing two- and three-wire control and machine control circuits utilizing limit and proximity switches, timers, relays, etc. (F,Sp, Su) Prerequisite Courses: Minimum 2.0 in (ELTE 108 or ELTE 110) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $10 of the Course Fee is non-refundable.
ELTE132	Control Panel Assembly	2	This course provides practical experience in the construction of an industrial control panel. The student will layout, assemble, wire, connect, troubleshoot and operate an industrial control panel for an oscillating table drive.(Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 130 or ELTE 131) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
ELTE136	Digital Basics	2	Introduces digital electronics basics: Binary number system, basic gates, and combination and sequential logic circuits. Laboratory work includes the analysis of digital circuits built on PC boards. (F) Prerequisite Course: Minimum 2.0 in (ELTE 130 or ELTE 131) Placement Scores: Reading Level 5 and Writing Level 2 and Math Level 4
ELTE141	National Electrical Code I	4	An introductory course designed for individuals with little or no knowledge of the Electrical Code. Students will study the structure and scope of the National Electrical Code, focusing on Chapters 1 through 4. These chapters constitute the general rules and most often used portion of the NEC. (F,Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 109 or ELTE 110 or HVAC 110) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: Students with a minimum of one year of experience may request a waiver for the prerequisites of this class. Call 517-483-1360 to request a waiver.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ELTE142	National Electrical Code II	4	This course builds on ELTE141 by applying the National Electrical Code to situations common to the practicing journey electrician. Extensive practice locating and interpreting sections of the NEC helps prepare students for the State Journey Examination. In addition to the NEC, State of Michigan electrical rules will be reviewed. (Sp) Prerequisite Courses: Minimum 2.0 in ELTE 141 Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: Students with a minimum of two years experience and a previous course in the National Electrical Code may request a waiver for the prerequisites of this class. Call 517-483-1360 to request a waiver.
ELTE145	Electrical Prints for Building	4	Covers construction prints emphasizing standard and nonstandard symbols and interpretation of prints. Uses the National Electrical Code to calculate branch circuit, motor circuit, and feeder sizes. Other topics include industrial loads, uninterruptible power supplies, and signaling systems. (F) Prerequisite Course: Minimum 2.0 in ELTE 141 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4 Recommended: Minimum 2.0 in ELTE 121 or ELTA 120 or equivalent Course Notes: This course requires 2 additional lab hours that need to be arranged with the instructor and ELTE lab staff. It is recommended that students attend the additional instructor led lab period assigned to your specific section. Students who choose to utilize the ELTE open lab times to satisfy the arranged lab time, should be aware that the instructor may not be present during this time to answer questions. $10 of the Course Fee is non-refundable.
ELTE147	National Electric Code Update	1	For individuals with National Electrical Code® experience and practical electrical knowledge and hold a journeyman electrician's license, a master electrician's license or a fire alarm specialty technician's license. Students will cover changes to the National Electrical Code® and discuss interpretation of the Code changes. (As Needed) Prerequisite: None Recommended: Experience using the National Electrical Code
ELTE150	Electric Motor Maintenance	2	Students learn to diagnose and test electric motors. Students will learn to identify and repair common problems in motors using meters, test equipment and appropriate tools. An introduction to rewinding and metal working procedures is also included. (F,Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 109 or ELTE 110 or HVAC 110) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
ELTE154	Utility Prints and Diagrams	3	This course will develop a student's ability to accurately read various types of blueprints used to document cabling, components and operation of electrical systems. Single-line, riser, schematic, ladder, relay, cabling, and layout diagrams will be addressed. The need for accurate recordkeeping will be reinforced throughout the class.(Sp) Prerequisite Courses: Minimum 2.0 in (ELTA 120 or ELTE 121) or concurrently Placement Scores: Reading Level 4 and Writing Level 4 and (Math Level 5 or Minimum 2.0 in ELTA 106)
ELTE156	Lineworker/Utility Rigging	3	This course covers uses and strengths of ropes, chains, block and tackles, truck-mounted augers, hoists, lifts and capstans. Knots used by lineworkers will receive extensive coverage and practice. Safe working strength of slings, hooks, sheaves, ropes and chains, the use of personal safety equipment, and proper hand signals used in the industry will be covered. (F, Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106) Course Note: $10 of the Course Fee is non-refundable.
ELTE170	Special Topics/Electrical Tech	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Electrical Technology and other related topics. Specific content may vary with each offering but will be related to the Electrical Technology program and the profession. (F,Sp,Su) Prerequisite: Determined by Section
ELTE171	Special Topics/Electrical P/Z	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Electrical Technology and other related topics. Specific content may vary with each offering but will be related to the Electrical Technology program and the profession. This course will be graded on a Pass/Fail basis. (F,Sp,Su) Prerequisite: Determined by Section
ELTE173	Energy Industry Fundamentals I	2	This course provides students with knowledge of basic and emerging principles and concepts that impact the energy industry including how the industry is organized and operates as a whole. Students will gain a basic understanding of electric power generation, including traditional and alternative sources. (F, Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Recommended: Minimum 2.0 in ELTE 108 Course Note: $10 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ELTE174	Energy Industry Fundamental II	2	This course provides students with knowledge of electric power and natural gas transmission and distribution. Students will also learn about career opportunities in the energy industry, including job entry requirements and educational pathways.(F, Sp) Prerequisite Course: Minimum 2.0 in (ELTE 173 or concurrently) Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: $10 of the Course Fee is non-refundable.
ELTE181	Pole Climbing I	0.5	An introduction to the climbing of wooden utility poles, this hands-on class gives students climbing instruction, time for developing basic skills and the ability to determine if the student is comfortable at heights. Exposure to the proper use of basic hand tools used in industry is included. (F, Su) Prerequisite: Program Approval for Acceptance into the Electrical Utility/Lineworker Curriculum Recommended: PFFT 180 Lineworker Fitness A within 1 semester or a passing score on the Lineworker Physical Ability Test (LPAT) within 1 semester
ELTE182	Pole Climbing II	0.5	This hands-on class provides students with the opportunity to build climbing technique, comfort working at various heights on the pole, and competency working with tools that are needed for success in advanced climbing classes in the Lineworker program. (F) Prerequisite Course: Minimum 3.5 in ELTE 181 Placement Scores: None
ELTE185	Pole Climbing Practice I	0.25	This hands-on class assumes students have had a minimum of 12 hours of active climbing skill development and provides the opportunity to practice, build and refine climbing technique. (F, Sp) Prerequisite Course: Minimum 3.5 in ELTE 181 Placement Scores: None
ELTE186	Pole Climbing Practice II	0.25	This hands-on class builds climbing skill and confidence based on competency developed in prerequisite courses. Students will have opportunity to evaluate and then focus on skills needing development. (Sp, Su) Prerequisite Courses: Minimum 2.5 in ELTE 182 or passing grade in ELTE 185 Placement Scores: None
ELTE187	Pole Climbing Practice III	0.25	This hands-on class assumes students have had a minimum of 32 hours of active climbing skill development and provides the opportunity to refine technique and develop the stamina required for advanced climbing classes in the Lineworker program. (Sp) Prerequisite Courses: Minimum 2.5 in ELTE 182 or passing grade in ELTE 185 Placement Scores: None
ELTE188	Pole Climbing Practice IV	0.25	This hands-on class assumes students have had a minimum of 40 hours of active climbing skill development and provides the opportunity to refine technique and build the stamina required for advanced climbing classes in the Lineworker program. (Sp) Prerequisite Courses: Minimum 2.5 in ELTE 182 or passing grade in ELTE 185 Placement Scores: None
ELTE232	Machine Controls II	4	This course is a continuation of ELTE131. Students will work with more components, larger and more complex machine control diagrams, automation interlocking, automatic continuous cycling of machinery, variable speed motor drives, design of control circuits for more complex machines, and the use of AutoCAD for drawing electrical schematics. (F, Sp) Prerequisite Courses: Minimum 2.0 in [ELTE 131 or (ELTE 129 and (ELTE 130 or concurrently)] Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4 Course Note: $10 of the Course Fee is non-refundable.
ELTE251	Energy Generation & Control I	4	Provides students with a foundational understanding of electrical power generated by steam turbines, gas turbines, and reciprocating SI and CI engines. Prime movers, generators, governors, regulators and fault protection equipment are covered. Addresses both theory and practice of maintenance, operation, repair and installation of electrical generating systems and related components. (F) Prerequisite Courses: Minimum 2.0 in (ELTE 121 and (ELTE 130 or ELTE 131) and (ELTE 123 or concurrently)) Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 5 Recommended: Minimum 2.0 in ELTE 150 Course Note: The textbook for ELTE 251 is purchased thru Electrical Generating Association (egse.org). Students can pick up an order form at West Campus in M127 or U206. Please allow enough time to receive the textbook before class begins.
ELTE252	Energy Generation & Control II	4	Second in a two-course sequence addressing electrical power generation. Covers advanced concepts of the prime mover and the generator as well as associated governors, regulators and fault protection equipment. Students will learn both theory and practice of maintenance, operation, repair and installation of electrical generating systems and related components. (Sp) Prerequisite: Minimum 2.0 in (ELTE 123 and ELTE 251) and Reading Level 5 and Writing Level 4 and Math Level 5
ELTE255	Power Instrumentation	4	An introduction to the instrumentation and control of power generation and distribution. The application, calibration and use of smart meters, electronic power meters, potential and current transformers, switchboard instruments & controls, power equipment measurement/protection, temperature measurement, 4-20ma current loop systems and programmable energy meters are explored and applied. (Sp) Prerequisite: Minimum 2.0 in (ELTE 251 and ELTE 260) and Reading Level 5 and Writing Level 4 and Math Level 5

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ELTE260	Programmable Controllers I	4	This course introduces students to the concepts and principles of programmable logic controllers (PLCs).Topics include the basics of ladder logic and function block programming, discrete input and output field device connections, as well as troubleshooting software, hardware, communications and other PLC related equipment. Allen Bradley and Siemens control technology will be utilized. (F, Sp) Prerequisite Courses: Minimum 2.0 in [ELTE 131 or (ELTE 129 and (ELTE 130 or concurrently)] Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4 Course Note: $5 of the Course Fee is non-refundable.
ELTE261	Programmable Controllers II	6	This course provides an in-depth understanding of Allen-Bradley ControlLogix programmable logic controllers. Students will learn about CLX flexible memory structure as it relates to data file types, data manipulation, and scheduling. Bit, word, and file operations will be extensively covered. Topics include Ethernet communications, analog field device connections, safety relays, variable frequency drives, remote I/O, and AB equipment configuration/installation. (F, Sp) Prerequisite Courses: Minimum 2.0 in (ELTE 260 or ELTA 160) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4 Course Note: Students are required to provide a 2 gigabyte memory stick (jump drive) with USB port interface. Course Note: $5 of the Course Fee is non-refundable.
ELTE262	Programmable Controllers III	5	This course provides an in depth understanding of industrial automation as it relates to integrated robot systems, distributive process control and safety related systems. (Sp) Prerequisite Courses: Minimum 2.5 in ELTE 261 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4 Recommended: Minimum 2.5 in METS 160 Course Note: $15 of the Course Fee is non-refundable.
ELTE270	Lineworker Fundamentals	1	The purpose of this course is to give prospective lineman apprenticeship candidates a good demonstration of the work they will be required to do as an apprentice and journeyman lineworker. Students will be given an introduction to the physical aspects and mental discipline required to perform the duties of a lineworker with demonstrations and physical tests. (F, Sp) Prerequisite Courses: None. Program Approval for Acceptance into the Electrical Utility/Lineworker Curriculum is required. Placement Scores: None
ELTE272	Electric Basic Line Climbing	4	This course is designed to provide students with the basic knowledge and pole climbing skills necessary to progress through the Electric Line Apprentice Program. (F, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: $60 of the Course Fee is non-refundable.
ELTE274	Ground/Utility Worker	6	This course is designed to provide students with the basic Ground Worker/Utility Worker knowledge and skills necessary to progress through the Electric Line Apprentice Program. (F, Su) Prerequisite Course: Minimum 3.5 in ELTE 272 Placement Scores: None
ELTE276	Energized Secondary Worker	5	This course addresses the knowledge and skills necessary to progress through the Electric Line Apprentice Program with a focus on the installation and maintenance of secondary lines of 120/240 Volts. Safe work practices on energized conductors and aerial lifts, digger derricks and associated equipment are developed and required. (F, Su) Prerequisite Course: Minimum 3.5 in ELTE 274 Placement Scores: None
ELTE290	Electrical Internship	2 to 4	This course provides Electrical Technology students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (F, Sp, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
ELTE291	Electrical Project Lab	1 to 4	A guided study of topics of interest in electrical technology. The student will prepare a summary report of activities and demonstrate results of laboratory experiences. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
EMTA100	Emergency Medical Responder	4	This course will provide the student with the knowledge and skills necessary to manage ill or injured victims at the scene of an emergency until the arrival of ambulance personnel. Successful completion enables the student to apply for state licensure as an emergency first responder. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the D2L Course Management site and/or in class. Course Note: $100 of the course fee is for medical supplies and is non-refundable.
EMTA101	Basic EMT I	4	First in a sequence of five courses to prepare the student as a Basic EMT. Emphasis is placed on didactic material including airway management, patient assessment, CPR soft tissue injuries, head, chest, and abdominal injuries, and proper use of equipment in the delivery of basic emergency care. (F,Sp,Su) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Course: EMTA 102 Course Notes: 1) The EMT Academy is offered in two distinct sessions. Students enrolling in the Main Campus Daytime Academy must enroll for all five EMTA sections together. Students enrolling in the Main Campus Evening Academy will complete in two semesters by enrolling in EMTA 101 and 102 during the Fall and in EMTA 103, 104, and 112 during the following Spring. See section notes for concurrent CRN numbers. 2) Students are required to pass an ICHAT Criminal Background investigation completed through the State of Michigan ICHAT website prior to starting the program. Cost is $10. Students MUST submit ICHAT documentation to the EMS Program office to receive Program Approval to enroll in the Academy. The EMS Program is located in HHS 108, 517-483-1403. 3) All EMT Academy students MUST attend a mandatory orientation session held on Friday, August 16, 2019, from 8:00am-12:00pm in HHS 213 at the main campus or Thursday, August 22, 2019, from 1:00-5:00pm in HHS 213 at the main campus. Please call 517-483-1403 to confirm your orientation date. 4) There will be additional cost to students for uniforms and textbooks. Medical supplies are included in the course fees. The medical supply fees are non-refundable once registered for the course. 5) In addition to regular class time, students are required to complete Bloodborne Pathogens Training online. Information will be distributed via the D2L Course Management site and in class.
EMTA102	Basic EMT II	2	Second in a sequence of five courses to prepare the student as a Basic EMT. Emphasis is placed on practical skills including patient assessment, bandaging, splinting, backboarding, oxygen delivery equipment, CPR, and airway management in the delivery of basic emergency care. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Course: EMTA 101 Course Note: $100 of the course fee is for medical supplies and is non-refundable.
EMTA103	Basic EMT III	4	The third in a sequence of five courses to prepare the student as a Basic EMT. Emphasis is placed on didactic material including the recognition and management of environmental and medical emergencies; verbal, written and radio communications; triage, emergency childbirth; and pediatric emergencies. (F,Sp,Su) Prerequisite Courses: Minimum 3.0 in (EMTA 101 and EMTA 102) Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Courses: EMTA 104 and EMTA 112
EMTA104	Basic EMT IV	2	The fourth course in a sequence of five to prepare the student as a Basic EMT. Emphasis is placed on the overall delivery of basic emergency care through simulated emergencies. (F,Sp,Su) Prerequisite Courses: Minimum 3.0 in (EMTA 101 and EMTA 102) Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Courses: EMTA 103 and EMTA 112
EMTA112	Basic EMT Clinical	2	The fifth course in a sequence of five to prepare the student as a basic EMT. Includes required OSHA standards, hospital clinicals, ambulance clinicals, and may include a community service component. Classroom time in the other EMT Program courses enhances assessment, history taking skills, and report writing. (F, Sp, Su) Prerequisite Courses: Minimum 3.0 in (EMTA 101 and EMTA 102) Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Courses: EMTA 103 and EMTA 104

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
EMTA222	EMS Instructor-Coordinator	9	The first of two courses for EMS personnel interested in becoming an EMS instructor coordinator. Includes teaching and testing methods, lesson plan development, writing performance objectives, course administration, State of Michigan application process for course approval, and meeting other State-mandated requirements. Student teaching is required. (F) Prerequisite Course: None. Program Approval is required. Must be able to provide proof of 3 years field experience with a responding Life Support agency within the State of Michigan. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: In order to qualify for State of Michigan EMS IC licensure, an individual must be able to provide proof of 3 years field experience with a responding Life Support agency within the State of Michigan. Please contact the EMS Program Director at 517-483-1530 for Program Approval.
EMTA224	EMS Instr-Coord Student Teach	1	The second of two courses for EMS personnel interested in becoming an EMS instructor coordinator, this course provides the opportunity to complete the required student teaching segment of the training. Students are required to complete student teaching time in both didactic and laboratory settings. All student teaching hours must be supervised and evaluated by a licensed EMS Instructor-Coordinator. (Sp) Prerequisite Course: Minimum 3.0 in EMTA 222 and Department Approval is required. Placement Score: None
ENGL098	Integrated Reading Writing I	6	This integrated reading and writing cornerstone course develops contextualized applications of skills and strategies necessary for academic and career success. Areas of focus include critical thinking and research processes, with emphasis on relevancy and transfer to academic courses and career goals. Concurrent enrollment in college-level classes is recommended. Students should meet with an academic advisor to determine which concurrent enrollment options to select.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 2 and Writing Level 2 Concurrent enrollment in one of the following courses: ACAD 100, FREN 121 or 122 or 201 or 202, GRMN 121 or 122 or 201 or 202, JAPN 121 or 122 or 201 or 202, MUSC 240 or 241, PSYC 200, RELG 150, SPAN121 or 122 or 201 or 202, or THEA 110 Course Note: 1) Exit Competency: A grade of 2.5 or higher will award placement levels of Reading Level 5 and Writing Level 6. A grade of 1.0-2.0 will award placement levels of Reading Level 4 and Writing Level 4 (students then can retest, or move on to ENGL 099); In addition, passing (2.0 or higher) the college-level concurrent enrollment course will award the placement levels of that class. 2) Additional concurrent enrollment possibilities: AUTB 101, AUTB 104, all AUTM, CITF 108, CIVL 101, CIVL 110, CIVL 136, DANC 101, DANC 102, DANC 103, DANC 104, DCTM 102, HERT 110, HERT 120, HERT 125, HERT 130, HERT 135, HERT 140, HERT 145, METS 102, MUSC 157, MUSC 163, THEA 120, WELD 103. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL099	Integrated Reading Writing II	4	This integrated reading and writing cornerstone course develops contextualized applications of skills and strategies necessary for academic and career success. Areas of focus include critical thinking and research processes, with emphasis on relevancy and transfer to academic courses and career goals. Concurrent enrollment in college-level classes is recommended. Students should meet with an academic advisor to determine which concurrent enrollment options to select.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Co-requisite Courses: ENGL 121 or ENGL 124 or ENGL 127 Recommended: Concurrent enrollment in courses selected from the list of concurrent enrollment options. Seek advice from an academic advisor to identify appropriate concurrent courses. Course Notes: 1) Exit Competency: A grade of 2.5 or higher will award placement levels of Reading Level 5 and Writing Level 6. If a minimum of 2.5 is not achieved, passing (2.0 or higher) the college-level concurrent enrollment course will award the placement levels of that class. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx. 3) Additional concurrent enrollment options: ACAD 100, ARTS 102, BIOL 120, BUSN 118, CHDV 100, CHSE 100, CHSE 108, CHSE 143, CHSE 151, COMM 110, FREN 121, FREN 122, FREN 201, FREN 202, GRMN 121, GRMN 122, GRMN 201, GRMN 202, HUMS 120, JAPN 121, JAPN 122, JAPN 201, JAPN 202, PSYC 200, RELG 150, SOCL 120, SPAN 121, SPAN 122, SPAN 201, SPAN 202, THEA 110, or technical career courses in the areas of Automotive, Computers, Construction, Electrical, Manufacturing, Technology, or Welding, as well as courses currently requiring Reading Level 4 and Writing Level 4 such as HUSE courses.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ENGL118	Personal Writing	3	Explores the various forms of personal writing (diaries, journals, letters, personal narratives, and autobiography) through written exercises and selected readings. The student's observations and life experiences are the focus of written assignments. Emphasizes language, style, and tone appropriate to the different forms of personal writing. (F,Sp) Prerequisite Course: None Placement Scores: (Reading Level 5 and Writing Level 4) or ENGL 099 concurrently Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL121	Composition I	4	Composition I is the study and practice of expository discourse to help students write more effectively. It emphasizes critical thinking, academic source materials, writing processes, content development, structure, style, database research, and documentation. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) Course Note:An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.
ENGL122	Composition II	4	ENGL122 introduces the students to various literary forms and develops analytical skills in reading, writing, and research techniques. Writing assignments begin with short essays and conclude with an extensive literary research paper. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (ENGL 121 or ENGL 131) or Placement Scores listed below Placement Scores: Reading Level 5 and Writing Level 8 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL124	Technical Writing	3	A college-level course in the study and practice of technical writing in a variety of formats for select audiences. Covers writing instructions, mechanism descriptions, technical definitions, as well as business letters, persuasive memos, job application materials, and basic research techniques. Students learn basic research techniques. Students will work individually and collaboratively. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) Recommended: Computer and/or keyboarding experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL127	Business Writing	3	College-level study of the theory and practice of business communication in a variety of forms, with emphasis on letters, memoranda and written reports, including research-based reports. Also covers job applications, resumes, and collaborative oral reports. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) Recommended: Computer and/or keyboarding experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL131	Honors Composition I	4	Honors Composition I is the study and practice of expository discourse to expand students' ability to write effectively. It emphasizes critical thinking, reading academic sources, writing processes, content development, structure, style, database research, and documentation. Students may expect a more rigorous approach to the course. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 7 Course Note: Students must attend the first week of class to avoid being dropped.
ENGL132	Honors Composition II	4	This course builds upon the writing skills developed in ENGL 121 to help students write argumentative essays which use logical support and appropriate documentation. The course develops analytical skills in reading, writing, and research techniques. Students learn about the development, structure, and style of academic research. Students may expect a more rigorous approach to the course. (F,Sp) Prerequisite: Minimum 3.5 in ENGL 121 or ENGL 131 or Reading Level 5 and Writing Level 8
ENGL201	Introduction to Poetry	4	An introduction to the content, form, style, and technique of poetry; its structural types: metrical, blank, and free verse; its thematic types: lyric, narrative, and dramatic; and its effects or purposes. The course emphasizes poetry written in English but includes English translations of representative poetry from other languages and cultures. (Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 and ENGL 122

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ENGL202	World Drama	4	Introduces drama as a unique genre with its own literary techniques and conventions within a global context. Students will read and interpret representative plays from the ancients to the 21st century, including works form Western and non-Western cultures. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: (ENGL 121 or ENGL 131) and ENGL 122
ENGL203	Introduction to the Narrative	4	This course is a study of prose genres: the essay, the short story, and the novel. Students will read and discuss a broad selection of works, representing many literary styles, forms, and traditions. The novel and the short story will be examined in historical, social, political, and literary contexts. (F) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122 Course Note: Students must attend the first week of class to avoid being dropped.
ENGL208	Children's Literature	4	This course offers a survey of children's literature, from fairy tales to young adult novels. Students will be introduced to a variety of literary genres in classic and contemporary works. Students will experience the literature through writing, discussion, oral or dramatic presentations, and other means suitable to classroom practice. (F,Sp,Su) Prerequisite Courses: None Placement Levels: Reading Level 5 and Writing Level 6 Recommended: (ENGL 121 or ENGL 131) and ENGL 122. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL211	World Literature I	4	A selective survey of the literatures of major world cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe to approximately the 17th century. Explores the historical, ethnic, aesthetic, political, economic, and thematic elements of their respective cultures through narrative prose fiction, poetry, and drama. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: (ENGL 121 or ENGL 131) and ENGL 122 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL212	World Literature II	4	A survey of the literatures of major cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe from approximately the 17th century through the present. Explores the historical, ethnic, aesthetic, political, economic, and thematic elements of their cultures through narrative prose fiction, poetry, and drama. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 and ENGL 122 Course Note: 1) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL220	Science Fiction	4	ENGL220 is an introductory course which explores significant issues in science fiction. Novels and/or stories will be the main focus, although works from other media also may be studied. The course's emphasis transcends entertainment to include understanding, interpretation, and analysis as well. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122 Course Note: Students must attend the first week of class to avoid being dropped.
ENGL240	The Film as Art	4	This course will introduce film as an art form capable of making perceptive comments on our civilization. Thematic analysis of 12 to 15 films of recognized merit will emphasize the film maker's visual and aural techniques as well as conventions more commonly associated with literature. (Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122
ENGL245	Popular Culture and Mass Media	4	A study of the popular culture distributed by mass media (newspapers, radio, film, television, magazines, and music videos) and how the media and popular culture reflect and shape our cultural beliefs. Extensive use of multimedia. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: (ENGL 121 or ENGL 131) and ENGL 122

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ENGL255	American Lit to 1865	4	Provides a perspective on the evolution of traditional American literature beginning with the writings of the first European explorers and Native American oral tradition. Features selected essays, autobiographical writings, poems, fiction, and drama from the mid-15th century to 1865, including the work of women and ethnic minorities, which have contributed to American thought. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122
ENGL256	American Lit 1865 to Present	4	Provides a perspective on the further development of traditional American literature from 1865 (the Realism period) to contemporary literature. Features selected essays, autobiographical writings, poems, fiction, and drama from the end of the Civil War to the literature of the late 12th century, including the work of women and ethnic minorities, which have profoundly shaped American literature. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 and ENGL 122
ENGL260	African-American Literature	4	This course introduces the African-American literary tradition as seen in the literature of the Americas, including the Caribbean. Selections explore the black experience in autobiography, essay, fiction, poetry, and drama. Themes of slavery, colonialism, and the Black Diaspora are discussed. Reading selections include the Harlem Renaissance and contemporary texts. (F) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 and ENGL 122
ENGL261	Creative Writing I	3	This course in a hybrid format helps students develop expressive abilities in writing poetry and short stories. Emphasizes narrative modes of the short story, and free verse forms and traditional forms of poetry. Students read and analyze models from masters in fiction and poetry. (F,Sp) Prerequisite Courses: Minimum 2.0 in (ENGL 121 or ENGL 131) or placement levels noted below Placement Scores: Reading Level 5 and Writing Level 8 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.
ENGL264	Nonfiction Writing	3	Study of nonfiction writing with a focus on marketing freelance writing. Students review a variety of effective writing techniques, study marketing information for their particular fields, including analysis of potential publishers and query letters, and discuss their writing in a workshop setting. Students prepare submission materials for editors. Word processing required. (F,Sp,Su) Prerequisite: Minimum 2.0 in (ENGL 121 or ENGL 131 or WRIT 121 or WRIT 131) or Reading Level 5 and Writing Level 8 Course Notes: 1) Formerly WRIT 264. 2) Students must attend the first week of class to avoid being dropped.
ENGL266	British Lit to 1800	4	British Literature I surveys the poetry, prose, and drama of the major British writers from Chaucer (14th Century) to the Satirists (18th Century). The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: (ENGL 121 or ENGL 131) and ENGL 122 Course Note: Students must attend the first week of class to avoid being dropped.
ENGL267	British Lit 1800 to Present	4	British Literature II surveys the poetry, prose, and drama of the major British writers from the Romantics (19th Century) to late 20th Century. The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122 Course Note: Students must attend the first week of class to avoid being dropped.
ENGL270	Gender and Literature	4	A study of selected works representing women and LBGTQ writers. Readings are chosen to engage students in thoughtful discussion and to increase understanding of themes, literary theory, issues, and modes of expression of women writers and the LBGTQ communities. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122
ENGL271	Creative Writing II	3	Emphasizes improving the ability to write effective poems, short stories, and novellas. Students select their own subjects and receive feedback in a workshop environment. (Sp) Prerequisite: Minimum 2.0 in ENGL 261 and Reading Level 5 Course Notes: 1) Formerly WRIT 270. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit Testing Services at http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ENGL276	Lyric Writing	3	This course introduces students to the craft of writing song lyrics. The work of professional songwriters as well as the students' work will be examined and discussed. Students are required to attend live performances. (F) Prerequisite: Minimum 2.0 in (ENGL 121 or ENGL 127 or ENGL 131 or WRIT 121 or WRIT 127 or WRIT 131) or Reading Level 5 and Writing Level 8 Course Note: Formerly WRIT 276
ENGL278	Writing the Novel	3	This course addresses all aspects of writing a novel. Classroom sessions will emphasize finding a narrative voice, establishing sturdy characters, and developing a workable plot. Students will receive feedback on their fiction in a workshop setting. Publishing information will be provided, but will not be a focus of the course. (F) Prerequisite Courses: Minimum 2.0 in ENGL 261 or ENGL 264 or ENGL 260 or ENGL 264 Placement Scores: Reading Level 5
ENGL279	Prose Style	3	An advanced study of non-fictional prose writing. Extensive directed practice helps experienced writers make their own writing clear, precise, direct, and graceful. Workshop sessions include a study of the expectations and choices in various types of writing, and of the relationships among purpose, structure, words, sentences, grammar, punctuation, and style. (Sp) Prerequisite: Minimum 2.0 in (ENGL 121 or ENGL 131) or Reading Level 5 and Writing Level 8 Course Note: 1) Formerly WRIT 279.
ENGL290	Shakespeare	4	Students will read, discuss and write about selected comedies, histories, tragedies and romances written by Shakespeare. To better understand how Shakespeare's work continues to influence literature and the arts, the class may also screen film versions of modern re-tellings of Shakespearean plots. (F,Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 and ENGL 122
ENGL295	Independent Study in English	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
ENVR121	Environmental Rules and Regs	3	Overview of federal and state environmental regulations and agency rules that regulate discharges to air, water, and land. Laws are examined with respect to the reason the regulation is needed, what the law does, and how it does it. The course is designed for students pursuing careers as environmental technicians. (Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
ENVR122	Enviro Sampl & Instrumentation	4	An introduction to sampling and monitoring procedures and instrumentation to accomplish a task. Students will learn to take samples from ground water, surface water, air, and soil. This course is designed for students pursuing careers in biological science, but emphasizes the skills used by environmental technicians. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
ENVR131	Industrial Process Safety	3	Introduction to general manufacturing processes with emphasis on waste reduction and pollution prevention strategies. Case studies of basic processes, materials flow, worker health and safety, waste reduction, and pollution prevention will be examined. Fundamentals of toxicology, epidemiology, and environmental health will be used in understanding workplace safety and health issues. (Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
ESOL050	Reading and Speaking Level 1	6	Level 1 ESOL students will develop basic vocabulary, reading, speaking, and listening skills. Emphasis on building these and related skills through a variety of readings and controlled communication activities leading to more independent learning. Word processing, email, and use of interactive software required. Lab hours required outside of class. (F,Sp) Prerequisite Courses: ESOL 1 Placement Scores: None Recommended: ESOL 055 concurrently
ESOL055	Grammar and Writing Level 1	6	Level 1 ESOL students will learn the fundamentals of the English grammar system to write clear and complete sentences. Content based readings will reinforce the grammar topics in this course. Course related computer technology will be introduced. (F,Sp)) Prerequisite Courses: ESOL 1 Placement Scores: None Recommended: ESOL 050 concurrently
ESOL070	Reading and Speaking Level 2	6	Level 2 ESOL students will develop higher level reading, speaking, and listening skills. Focus on theme-based reading, guided communication activities, oral reports, and increased responsibility for independent learning. Continued emphasis on academic vocabulary building. Word processing, email, use of interactive software required. Lab hours required outside of class. (F,Sp, Su) Prerequisite Courses: None Placement Score: ESOL 2 or Minimum 2.5 in (ESOL 050 and ESOL 055) Recommended: ESOL 075 concurrently

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ESOL075	Grammar and Writing Level 2	6	Level 2 ESOL students will use Standard English grammar to write clear and complete sentences in well-developed paragraphs using a process approach to writing. Content based readings will reinforce the grammar topics in this course. Course related computer technology will be used to complete grammar tasks and writing assignments. (F, Sp, Su) Prerequisite Courses: None Placement Level: ESOL 2 or Minimum 2.5 in (ESOL 050 and ESOL 055) Recommended: ESOL 070 concurrently
ESOL090	Reading and Speaking Level 3	6	Level 3 ESOL students will develop academic reading, speaking, listening and note-taking skills, interact with theme-based readings, and engage in higher level communication activities (oral presentations and tense-appropriate narration). Emphasis on academic vocabulary expansion. Technology skills required. Lab hours required outside of class. Achieving exit competency earns Reading Level 3. (F,Sp,Su) Prerequisite Courses: None Placement Scores: ESOL 3 or Minimum 2.5 in (ESOL 070 and ESOL 075) Recommended: ESOL 095 concurrently
ESOL095	Grammar and Writing Level 3	6	Level 3 ESOL students will use Standard English grammar to write clear and complete sentences in basic essays using a process approach to writing. Content based readings will reinforce the grammar topics in this course. Typing skills and course related computer technology is used to complete grammar and writing tasks. Achieving exit competency earns Writing Level 2. (F,Sp,Su) Prerequisite Courses: None Placement Scores: ESOL 3 or Minimum 2.5 in (ESOL 070 and ESOL 075) Recommended: ESOL 090 concurrently
ESOL098	ESL Combined Skills Level 4	6	Prepares non-native speakers of English for success in college courses. A theme-based approach helps learners develop reading, writing, academic vocabulary, grammar, and critical thinking skills. Emphasis on technology skills for academic work including word processing, MLA/APA format, D2L dropbox and discussion boards. Students should meet with an academic advisor to determine which concurrent enrollment options to select. (F,Sp,Su) Prerequisite Courses: Minimum 2.5 in (ESOL 090 and ESOL 095) or placement scores noted below Placement Scores: ESOL 4 or (Reading Level 2 and Writing Level 2) Co-requisite Courses: MUSC 241 or PSYC 200 (excluding online and online hybrid sections) or THEA 110 Recommended: ACAD 101 Course Note: Students may co-enroll in certain college-level courses selected with assistance from an academic advisor.
ESOL099	ESL Combined Skills Level 5	4	Advanced level non-native speakers of English will develop reading, vocabulary, and grammar skills for academic success. Students will use college-level texts to develop reading, writing, and critical skills. Emphasis on technology skills for academic work. Students should meet with an academic advisor to determine which concurrent enrollment options to select. Reading Level 5 and Writing Level 6 granted upon successful completion (exit competency 2.5). (F,Sp,Su) Prerequisite Course: None Placement Scores: (Reading Level 4 and Writing Level 4) or (ESOL Level 5) Co-requisite Course: ENGL 121 or ENGL 124 or ENGL 127
FASH100	Fashion Sketching	3	Techniques of fashion sketching and producing illustrations using various media. Topics will include design and inspiration, figure croquis, garments, and pattern flats. Establish work for student design portfolio. (F, Sp, Su) Prerequisite: Reading Level 4 and Writing Level 4 Recommended: FASH 120 or concurrently
FASH101	Special Topics/App. & Textiles	.25 to 8	Special topics and current issues for professional development within the fashion industry. (F,Sp,Su) Prerequisite: Determined by Section
FASH103	Fundamentals for Fashion	3	An introductory course on the basic aspects of fashion design - the elements and principles of design, color, and silhouettes. Assignments and projects are progressive so that students will have the opportunity to establish their fashion design identity. (F, Sp) Prerequisite: Reading Level 4 and Writing Level 4 Recommended: FASH 100 or concurrently
FASH105	Fashion Computer-Aided Design	3	Introductory course using computer aided design software to create expressive fashion boards and presentations. Effective use of software features are used to create and alter shapes, images, and manipulate text to create mood and communicate design concepts for projects. Establish work for student design portfolio. (F, Sp) Prerequisite: Minimum 2.0 in (FASH 100 and FASH 103 or concurrently) and Reading Level 4 and Writing Level 4
FASH120	Intro to the Fashion Industry	3	An introduction to the apparel and textiles industry including the history of fashion, manufacturing, global marketing, management, merchandising, retailing and eCommerce. Establish work for student design portfolio. (F, Sp, Su) Prerequisite: Reading Level 4 and Writing Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
FASH130	Apparel Analysis/Specification	3	This course covers apparel and product development, specification sheets and technical design for manufacturing in a global market. It includes industry standards, size measurement calculations, cost and quality using computer applications. Establish work for student design portfolio. (Sp) Prerequisite: Minimum 2.0 in ((FASH 103 and FASH 105) or FASH 110) and Reading Level 4 and Writing Level 4 Recommended: FASH 120
FASH135	Fashion Design Process	3	This course focuses on the various processes and techniques used to stimulate and develop creativity in fashion. Students are encouraged to build personal creativity tools to achieve their design goals. The communication of ideas using visual and verbal methods is explored. Students create work for student design portfolios. (F, Sp) Prerequisite: Minimum 2.0 in FASH 100 and Reading Level 4 and Writing Level 4 Recommended: FASH 103 and FASH 105 and FASH 120 or concurrently
FASH144	Visual Merchandising & Design	3	Apply elements and principles of design in visual merchandising and display. Implement, develop, design, and display in offsite retail environments. (F) Prerequisite: Minimum 2.0 in FASH 120 and Reading Level 4 and Writing Level 4 Recommended: (FASH 103 and FASH 105 or concurrently) and ARTS 102 Course Note: This course has several meetings off campus working with local retailers. All coursework is not accomplished in class and student must have transportation and flexibility.
FASH160	Fashion Skills Tech I	4	Students will learn the basics of sewing. Topics covered include knowledge and operation of sewing machines, familiarity with essential equipment, choosing and preparing a pattern, information on fabric and notion selection and construction of sample projects for a Sewing Portfolio. (F) Prerequisite: Reading Level 5 and Writing Level 6
FASH165	Fashion Skill Tech II	4	This course focuses on the application and mastery of basic sewing skills in pattern and fabric recognition and problem solving related to individual creative design. Emphasis is on technology, technical accuracy, and appropriate use of selected materials and supplies. (Sp) Prerequisite: Minimum 2.0 in FASH 160 and Reading Level 5 and Writing Level 6 Course Note: Students who are already proficient in sewing may waive the prerequisite of FASH 160 for this course. Please contact the Program Advisor, Andrea Bartlett, at (517) 483-1194 for sewing waiver and department approval.
FASH185	Survey of Textiles	3	Examine and analyze properties and identification for textile fibers, yarns and fabric construction through scientific exploration. Includes finishes, regulations, performance, processes, applications and care in fashion design. (F) Prerequisite: Reading Level 5 and Writing Level 6
FASH200	Fashion Illustration	3	This course covers standard illustration techniques used in the fashion industry through demonstrations and in-class exercises. Students illustrate color fashion plates with apparel details, fashion silhouettes, and textile rendering using professional mediums. Intermediate flat sketch and technical drawing skills are taught which provide content for the student's design portfolio. (Sp) Prerequisite: Minimum 2.0 in FASH 100 and Reading Level 4 and Writing Level 4 Recommended: FASH 130 and FASH 185
FASH210	Patternmaking	4	Students learn to develop basic body slopers using industry standards. Collars and basic sleeve shapes are made. Paper patterns and a final fabric sample are developed. Fit and balance in order to create a high-quality production pattern, and specifications are discussed in relation to both pattern development and finished garment measurements. (F) Prerequisite: Minimum 2.0 in FASH 165 and Reading Level 5 and Writing Level 6 and Math Level 4 Recommended: FASH 130
FASH231	Fash Hist through 19th Century	3	This course surveys the history of fashionable dress in the West from the late Middle Ages through the nineteenth century. Students will define fashion, its relation to the arts, and function in society, with the goal of surpassing the simple chronicle of changing styles to explore the meaning of fashion. (F) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: FASH 120
FASH232	Fash Hist-20th Century Onward	3	This course provides a study of western fashion, from Belle Époque to hip-hop America. The formation and definition of "modern" fashion and the influences of modern art, internationalism, postmodernism, the world wars, designers, Hollywood, and advertising will be explored. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: FASH 120

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
FASH260	Retail Buying/Fashion Planning	3	This is a course in merchandising math for fashion buying. Formulas based upon buying industry practices, procedures and calculations using computer applications. Establish work for student design portfolio. (Sp) Prerequisite: Minimum 2.0 in FASH 120 and Reading Level 4 and Writing Level 4 and Math Level 5 Recommended: CITA 126
FASH263	Fashion/Textiles Internship	2 to 4	Directed worksite experience in the fashion industry. Submit regularly scheduled progress reports and periodically meet with the supervising faculty member. (F, Sp, Su) Prerequisite: Department Approval Recommended: 2.0 GPA and 20 credits completed in FASH Course Note: It is recommended that students begin their worksite search one semester before enrolling for Internship. Prior to registration, the student will also need to contact the Program Advisor, Christine Conner, at 517-483-1128, for both worksite placement and Department Approval.
FASH270	Fashion Portfolio	2	This is a capstone course to develop and preserve visual works by organizing, photographing or scanning, mounting, and digitally enhancing. Course outcome is a culmination of student coursework into a professional portfolio formatted physically and digitally to obtain immediate employment or transfer to a senior college. (Sp, Su) Prerequisite: Minimum 2.0 in (((FASH 103 and FASH 105) or FASH 110) and FASH 120) and Reading Level 4 and Writing Level 4 Recommended: 20 credits completed in FASH
FASH275	Directed Study in Fashion	1 to 4	Advanced opportunity to explore topics not addressed in the curriculum, including special projects, field study and travel, research, and other directed study topics. Establish work for student design portfolio. (F, Sp, Su) Prerequisite: Department Approval Recommended: 2.0 GPA and 20 credits completed in FASH
FIRE100	Principles Emergency Services	4	This course provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; and fire service nomenclature. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4
FIRE101	MI F.F.T.C. Basic Fire Level I	10	Level I is basic training required for all firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes the basics of fire suppression, apparatus operation, life safety, and physical fitness. (F,Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Co-requisite Course(s): FIRE 102 and PFFT 119 Course Note: $800 of the Course Fee is non-refundable.
FIRE102	MI F.F.T.C. Basic Fire Lev II	6	Level II is basic training required for all career firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighter's Training Council and includes advanced fire suppression, aerial operation, life safety, and physical fitness. (F,Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Co-requisite Course(s): FIRE 101 and PFFT 119
FIRE104	Fire Behavior & Combustion	3	This course explores the theories and fundamentals of how and why fires start and spread. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4
FIRE105	Fire/Hydraulics/Water Supply	4	This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4
FIRE110	Fire Prevention	3	This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. (F) Prerequisite Courses: Minimum 2.0 in (FIRE 100 or concurrently) or (FIRE 101 and FIRE 102) Placement Scores: Reading Level 5 and Writing Level 4
FIRE112	Occup Health & Safety/Fire Svc	4	This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. (F) Prerequisite Course: Minimum 2.0 in (FIRE 104 or concurrently) Placement Scores: Reading Level 5 and Writing Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
FIRE115	Bldg Construction/Fire Protect	4	This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. (F) Prerequisite Courses: Minimum 2.0 in ((FIRE 100 or concurrently) or (FIRE 101 and FIRE 102)) Placement Scores: Reading Level 5 and Writing Level 4
FIRE122	Hazardous Materials Chemistry	4	This course covers basic fire chemistry relating to the categories of hazardous materials including problems with recognition, reactivity, and health encountered by firefighters. (F) Prerequisite Courses: Minimum 2.0 in ((FIRE 104 or concurrently) or (FIRE 101 and FIRE 102)) Placement Scores: Reading Level 5 and Writing Level 4
FIRE125	Fire Protection Systems	4	This course provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers. (Sp) Prerequisite Courses: Minimum 2.0 in (FIRE 105 or FIRE 110) Placement Scores: Reading Level 5 and Writing Level 4
FIRE150	Strategy and Tactics	4	This course provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. This course meets the Michigan Office of Fire Fighter Training prerequisites for Fire Officer I and II. (Sp) Prerequisite Courses: (Minimum 2.0 in FIRE 101 or FIRE 102) or (MI F.F.T.C. Fire Fighter I & II Certification) and Department Approval Placement Scores: None Course Note: Department Approval required. Contact the Fire Technology Program at (517) 483-1394.
FIRE210	Fire Investigation I	4	This course is intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes. (F) Prerequisite Courses: Minimum 2.0 in (FIRE 104 or concurrently) or (FIRE 101 and FIRE 102) and Department Approval Placement Scores: None Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.
FIRE215	Fire Investigation II	3	This course is intended to provide the student with advanced technical knowledge of rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and testifying. (Sp) Prerequisite Course: Minimum 2.0 in FIRE 210 and Department Approval Placement Scores: None Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.
FIRE220	Hazardous Materials/Fire Svc	4	This course explores the concepts and methods of detection, control, and mitigation of hazardous materials incidents. Contains specific elements of NFPA 471, 472 and OSHA CFR 1910.120. This course is designed to train Haz-mat technicians. (Sp) Prerequisite Courses: Minimum 2.0 in FIRE 104 or (FIRE 101 and FIRE 102) and Haz-Mat Operational Level Training and Department Approval Placement Scores: None Course Note: Contact the Fire Technology Program at (517) 483-9608 for department approval.
FIRE245	Fire Officer I & II	4	This course introduces the firefighter to the duties assigned to company level officers. Topics addressed include budgeting, planning, public relations, personnel management, communications, legal responsibilities, and safety at the company level. This course complies with the Michigan Office of Fire Fighter Training requirements for Fire Officer I and II. (F) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: 1) Department approval required. Contact the Fire Technology Program at (517) 483-1394. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
FIRE250	Fire Administration I	4	This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis is placed on fire service leadership from the perspective of the company officer.(F) Prerequisite Courses: Minimum 2.0 in (FIRE 150 or Michigan Office of Firefighter Training Fire Officer III) Placement Scores: Reading Level 5 and Writing Level 4 Course Notes: 1) Students with Michigan Office of Firefighter Training Fire Officer III certification should contact the FIRE program office at (517) 483-1394 for enrollment approval. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
FIRE255	Fire Officer III & IV	4	This course provides the basic tools for analyzing and evaluating budgets, programs, policies, personnel and management systems within the fire service organization. Data interpretation and planning are major elements addressed in this course. Enhancement of fire service leadership decision-making capabilities is the primary focus of this course. (Sp) Prerequisite Courses: Minimum 2.0 in (FIRE 245 and FIRE 250) or concurrently and Department Approval Placement Scores: None Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.
FIRE260	Legal Aspects/Fire Service	4	This course introduces the federal, state, and local laws that regulate emergency services, national standards which influence emergency services, standard of care, tort and liability. Relevant court cases are also reviewed. (Sp) Prerequisite Courses: Minimum 2.0 in FIRE 104 or (FIRE 101 and FIRE 102) and Department Approval Placement Scores: None Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.
FIRE265	Fire Service Blue Card	4	This Incident Command Certification Program is designed to first instruct, train, and then evaluate and certify Fire Department Officers who serve in the role of Incident Commander that supervise and manage emergency and hazard zone operations for every day, local NIMS Type 4, and Type 5 events. (F, Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: Department approval is required. Contact the Fire Technology Program advisor at (517) 483-1394. In order to get credit for this class, the student must show proof of Blue Card Certificate.
FIRE270	Fire Service Career Developmnt	3	This course prepares the student for entry into the fire service workplace. Student will learn new processes of organizational operations and professional development skills. Students will complete 108 hrs of internship with a previously screened agency. The required Associate Degree assessment will be administered in this course. (F, Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Recommended: Completion of all other required courses in curriculum Course Note: Department approval required. Contact the Fire Technology Program advisor at 517-483-1394.
FIRE280	Fire Directed Indep Study	.5 to 3	This course includes special research, projects, or directed study in fire science technology. Firefighting students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. A learning contract specifying objectives, activities, and outcomes is required. (F,Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: Department approval required. Contact the Fire Technology Program advisor at (517) 483-1394.
FIRE285	Fire Science Special Topics	.25 to 8	This course offers students the opportunity to learn new fire science career skills and knowledge. Specific up-to-date content will vary with each topic presented and will be related to fire science careers. (As Needed) Prerequisites: Determined by Section Course Note: Department approval required. Contact the Fire Technology Program advisor at (517) 483-1394.
FIRE295	Fire Science Special Topics	.25 to 8	This course offers students the opportunity to learn new fire science career skills and knowledge. Specific up-to-date content will vary with each topic presented and will be related to fire science careers. This course will be graded on a Pass/Fail basis. (As Needed) Prerequisite: Determined by Section
FREN121	Elementary French I	4	First course of a two-semester sequence in elementary French. Students are introduced to basic structures of French, enabling them to develop listening, speaking, reading, and writing skills. Emphasis is on contemporary vocabulary, essentials of grammar, and pronunciation. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
FREN122	Elementary French II	4	Second course of a two-semester sequence in Elementary French. Introduction to more complex structures and patterns, and more active use of spoken and written French. (F, Sp) Prerequisite Course: Minimum 2.0 in FREN 121 or equivalent Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
FREN201	Intermediate French I	4	First course of a two-semester sequence. Course provides grammar review, vocabulary building, listening comprehension, composition writing, group discussions, and readings of literary and cultural texts, short stories, and news articles for a better understanding of the francophone world. (F) Prerequisite Courses: Minimum 2.0 in FREN 122 or equivalent Placement Scores: Reading Level 5 or ENGL 098 or ENGL 099 or NCSS 101 concurrently
FREN202	Intermediate French II	4	Second course of a two-semester sequence. Course includes a review of more complex grammar topics, readings of cultural and literary texts, short stories, and newspaper articles for a better understanding of the francophone world. Students will improve fluency through listening-comprehension, writing, and discussions in the target language. (Sp) Prerequisite: Minimum 2.0 in FREN 201 or equivalent and ((Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently))
GEOG120	Introduction to Geography	3	An introductory course designed to provide contemporary geographic ideas and mapping techniques to study the interaction between people and their physical environment. Selected topics include soils, land forms, water, climate, natural vegetation, agriculture, urbanization, demographic patterns and resource utilization. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) and [Math Level 4 or Minimum 2.0 in (Math 105 or Math 106)] Recommended: ENGL 121.
GEOG200	World Regional Geography	4	This course describes and analyzes human relationships with the natural and cultural environment and examines the physical and cultural aspects of the major regions of the world. International interdependency is examined to promote global awareness. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
GEOG202	Geography of North America	3	A study of the cultural and physical aspects of North America. This course will identify some of the factors that influence the quality of life and give character to each of the various subregions. (Sp,Su) Prerequisite: Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106). Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
GEOG220	Weather, Forecasting & Climate	4	Introduces the meteorological and climatological sciences. The basics and the limitations of weather forecasting, as well as climatic data, will be examined. Concepts presented include cloud and precipitation types, cyclonic characteristics, computer guidance analysis, and the importance of physical geography in weather and climate. No science background is presumed. (F) Prerequisite: Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106).
GEOG221	Physical Geography	4	Emphasizes landforms, flora and fauna, weather and climatic elements, land forms, mass wasting, hydrology, and soils. Offers an extensive study of these forces and phenomena through lecture and laboratory exercises. This study notes the environmental and ecological interrelationships between flora and fauna, and between the physical world and human society. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
GEOL221	Physical Geology	4	This course investigates the dynamic physical earth using a cause-effect theme, and emphasizes relationships of geologic cycles (tectonic/hydrologic) to modifications of earth's crust (e.g., volcanism, mountain building, rivers, glaciers) with introduction to environmental topics and earth resources. Laboratory includes mineral and rock identification, topographic and geologic map interpretation, and plate tectonics exercises. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or (MATH 105 concurrently or MATH 106 concurrently)]

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
GEOL222	Historical Geology	4	Plate tectonics is used to integrate crustal and organic evolution in the dynamic global system. Includes methods of geologic inquiry and critical evaluation of evidence. Laboratory stresses interpretation of the rock and fossil records, reconstruction of past ecosystems, geologic maps, and plate tectonics' influence on the environment. (Sp) Prerequisite Courses: Minimum 2.0 in [GEOL 221 or GEOL 230 or (ISCI 121 and ISCI 122)] Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
GEOL230	Environmental Geology	4	Concepts of physical geology are applied to human interaction with the environment. Geologic resources (e.g., minerals, energy, and water) and hazards (e.g., earthquakes, landslides, and flooding) are explored. Laboratory includes rock and mineral identification, map reading and interpretation, evaluation of land use alternatives, and problem-solving activities related to environmental issues. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or (MATH 105 concurrently or MATH 106 concurrently)]
GERO100	Introduction to Human Aging	4	This course provides students with a basic orientation to the study of aging. Emphasis is placed on the psychosocial, cultural, and individual issues which impact aging persons and their families. Students will learn to identify and utilize resources across the human services network. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6
GERO164	Med & Alcohol Use/Older Adults	0.5	Medication and alcohol use among older adults is explored in this seminar, including prescription and non-prescription medicines, side effects, drug interactions, and strategies for using medicines wisely. Participants will learn to identify a substance-abuse situation and how to make appropriate referrals.(F,Sp) Prerequisite Course: None Placement Score: None
GERO169	Legal Rights of Older Adults	0.5	This course focuses on issues such as guardianship, conservatorship, power of attorney, advance care directives, and nursing home residency, including actual and perceived choices the individual has as aging and illness occur. (F,Sp) Prerequisite Course: None Placement Score: None
GERO191	Special Topics in Gerontology	.25 to 4	This course consists of a series of seminars which address current issues in the field of gerontology. The seminars are designed to provide up-to-date information on selected, high-interest subjects concerning human aging. (As Needed) Prerequisite Course: Determined by Section Placement Score: None
GRMN121	Elementary German I	4	This is the first course of a two-semester sequence in elementary German. Students are introduced to the basic structures of German, enabling them to develop listening, speaking, reading, and writing skills. Emphasis is on practical vocabulary, essentials of grammar, basic pronunciation and contemporary culture. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
GRMN122	Elementary German II	4	This is the second course of a two-semester sequence in elementary German. Students are introduced to more advanced structures of German, enabling them to further practice listening, speaking, reading, and writing skills. Emphasis is on practical vocabulary, contemporary culture, and essentials of grammar and pronunciation. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in GRMN 121 or equivalent Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
GRMN201	Intermediate German I	4	This is the first course of a two-semester sequence in intermediate German. This course reviews and introduces more advanced grammar structures, vocabulary building, group discussions, and more information on German culture and everyday life. Class is taught mainly in German. (F) Prerequisite Courses: Minimum 2.0 in GRMN 122 or equivalent Placement Scores: Reading Level 5 or ENGL 098 or ENGL 099 or NCSS 101 concurrently Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
GRMN202	Intermediate German II	4	This is the second course of a two-semester sequence in intermediate German with advanced practice in the basic skills: speaking, listening comprehension, reading, and writing. A review of advanced structures, composition, and viewing and discussion of contemporary German culture are included. Class is taught mainly in German. (Sp) Prerequisite: Minimum 2.0 in GRMN 201 or equivalent and ((Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently)) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
GSCI100	GIS Principles & Applications	3	This entry level course explores the fundamental concepts underlying all geographic information systems. These concepts will be demonstrated by examining how GIS is used in planning, law enforcement, medicine, asset management, transportation and other fields. (F) Prerequisite Course: None Placement Scores: None
GSCI110	Beginning ArcGIS	3	This course is an introduction in the use of ArcGIS software. ArcGIS is a leading product used in the design of Geographic Information Systems (GIS). Students will learn the basic functionality of this software and its application in real-word scenarios. GIS principles will also be covered. Students will conceptualize, design and present a final project. (Sp) Prerequisite Courses: None Placement Scores: Reading Level 3 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
GSCI120	Advanced ArcGIS	3	This course will build on the fundamentals learned in GSCI 110. Students will use ArcGIS tools and processing to complete a series of assigned projects. Students will learn modeling and analysis techniques using a variety of vector and raster datasets. Students will conceptualize, design, implement and present a final project.(F) Prerequisite Course: Minimum 2.0 in GSCI 110 (formerly GRET 110) Placement Scores: Reading Level 3 and Math Level 4
GSCI175	Special Topics/GIS Technology	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Geographic Information Systems Technology and other related topics. Specific content may vary with each offering and will be related to the Geospatial Science Program. (F,Sp,Su) Prerequisite: Determined by Section
GSCI210	Global Positioning Systems	3	This course covers the basic principles necessary to set up, operate, and run a Global Positioning System (GPS) receiving station, as well as collect information with a receiver. Data collection will be incorporated into a computer database program. The information link with Geographic Information Systems (GIS) and the use of GPS in GIS will be demonstrated.(F) Prerequisite Course: None Placement Scores: None
GSCI240	Cartography in GIS	3	The basic principles, functions, and origins of maps will be discussed. The student will construct various types of maps. Computer-offered map planning and design along with how to read, print, and design maps will also be covered. (Sp) Prerequisite Course: Minimum 2.0 in (GSCI 110 or concurrently (formerly GRET 110)) Placement Scores: Reading Level 3 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
GSCI241	Remote Sens/AirPhoto Interpret	3	This course will include the development of skills necessary for basic interpretation of aerial photography data, how it is collected, and the ability to analyze maps created from the data collected in this method. The current technology and GIS relationship will be highlighted. (Sp) Prerequisite Course: Minimum 2.0 in GSCI 110 (formerly GRET 110) Placement Scores: Reading Level 3 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
GSCI260	Automating Workflows in GIS	3	This course will explore a variety of ways to automate workflows in ArcGIS software. In addition to using "batch" functionality in ArcGIS software, the student will be exposed to Model Builder and creating Python scripts.(F) Prerequisite Course: Minimum 2.0 in GSCI 110 (formerly GRET 110) Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
GSCI264	Web GIS	3	This course will explore a variety of ways to migrate GIS maps and data to the internet for public viewing and sharing. Technologies include Web maps, HTML, CSS & JavaScript code, Mobile technology, and ArcGIS Online. (Sp) Prerequisite Course: Minimum 2.0 in GSCI 110 (formerly GRET 110) Placement Scores: Reading Level 3 and Writing Level 2 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
GSCI271	Parcel Mapping	3	This course will teach students how to interpret and produce ownership parcels based on legal descriptions in a GIS environment.(F) Prerequisite Course: Minimum 2.0 in GSCI 110 (formerly GRET 110) Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
GSCI275	GIS Proj Mgmt & Implementation	3	This is a capstone course designed for students to develop the skills necessary for the design and implementation of GIS. The student will present his/her project to a client and train the client in the system that they developed. The student will also develop skills in project management and system documentation. (Sp) Prerequisite: Department Approval
GSCI290	GIS Internship	2 to 4	This course provides Geospatial Science students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (F, Sp, Su) Prerequisite: Department Approval
GSEM100	General Related Seminar	.25 to 5	This course will cover a variety of topics in general related fields. For individuals already employed in the environment seeking to upgrade their skills or anyone looking to be employed in a particular career field. (F,Sp,Su) Prerequisite: None
HERT110	Equipment Introduction	5	This course is intended to give the student an overall review of legal and work responsibilities of an operator of heavy construction equipment. Safety, inspections, and familiarization of equipment and operation standards for all major pieces of equipment will be stressed. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None
HERT120	Heavy Engine Rebuild	6	Upon completion of this course, the successful student will be able to disassemble, inspect, and reassemble a heavy-duty diesel engine. (F) Prerequisite Courses: None Placement Scores: None
HERT125	Heavy Equipment Electronics	5	Upon completion of this course the successful student will be able to diagnose and repair electrical problems on heavy duty equipment. (Sp) Prerequisite Courses: None Placement Scores: None
HERT130	Equipment Hydraulics	6	Upon completion of this course the successful student will be able to diagnose and repair hydraulic problems found typically on heavy duty construction equipment. (F) Prerequisite Courses: None Placement Scores: None
HERT135	Diesel Fuel Systems	4	Upon completion of this course, the successful student will be able to diagnose and repair common fuel system failures found on heavy-duty diesel engines. (Su) Prerequisite Courses: None Placement Scores: None
HERT140	Equipment Powertrain	5	Upon completion of this course, the successful student will be able to identify and inspect and disassemble and assemble and repair powertrain components in heavy duty equipment. (Sp) Prerequisite Courses: None Placement Scores: None
HERT145	Equipment Service Writing	4	Upon completion the student will be able to make repair estimates on a disabled piece of construction equipment. (Su) Prerequisite Courses: None Placement Scores: None
HERT210	Heavy Equipment Internship	3	Students earn credits while employed performing duties associated with the heavy equipment operator or repair technician occupations. The student will work under the general supervision of an experienced equipment operator or repair technician and will learn current industry practices. The program coordinator must approve the training station and working conditions. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
HIST150	African-American History	4	This course will provide an overview of the African-American experience in the United States, from the arrival of the first Africans in the New World to the present. (Sp) Prerequisite Course: None Placement Score: Reading Level 5
HIST210	Studies in American History	4	Covers problems of research, writing, philosophy, and interpretation of history, involving a detailed examination of a particular area of American history. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
HIST211	U.S. History to 1877	4	A political, economic, social and cultural history of the United States from colonial beginnings to 1877. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HIST212	U.S. History: 1877 to Present	4	A political, economic, social, and cultural history of the United States from the end of reconstruction to the present. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HIST214	African History	4	Surveys African history with emphasis on pre-colonial and colonial Africa, nationalism and the struggle for independence, colonialism and economic development/underdevelopment, and cultures and traditions as factors in development. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131).
HIST220	Michigan History	4	A survey of the political, economic, and social development of Michigan from precolonial times to the present. (F,Sp, Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HIST235	Modern European History	4	This course will survey political, social, economic, and cultural developments in Europe from approximately the 17th Century to the present. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
HIST240	Latin American History	4	A survey of the history and culture of Latin America from pre-Columbian civilizations to the present. This course will examine political, social, and cultural developments in Latin America and assess the role of colonialism, nationalism, and world economic trends in shaping Latin American countries. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
HIST250	History of Modern Asia	4	This course will survey political, social, and economic developments as well as principal cultural trends in the major civilizations of Asia from approximately the 17th Century to the present. The course will also include an examination of the interactions among Asian societies and between Asia and the West. (F) Prerequisite: Reading Level 5 and Writing Level 6
HIST271	History of US Foreign Policy	4	An historical exploration of political, economic, cultural and strategic forces that shaped the development of American foreign policy from the colonial era to the present. The course examines the historic foundations as well as the problems, challenges and institutions that influenced the making of foreign policy in the United States. (F) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: HIST 211 or HIST 212
HIST295	Independent Study in History	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp) Prerequisite: Department Approval
HMFS170	Menu Management and Design	3	Design a menu using accurate descriptive terms, calculation of selling prices, layouts recommended, selection of fonts and colors. Includes analysis of menus including accuracy (truth in menu), the menu as a marketing tool, and current trends. Semester project included. (Sp) Prerequisite: Reading Level 4 and Writing Level 4
HMFS190	Internship	3	This 200 hour internship is a capstone course required for all Hospitality students that will provide hands-on experience in a food service faculty or lodging property. The rotational work experience and required course projects will coincide with industry principles, techniques, skills, and procedures mastered in previous courses. Students are responsible to find their own internship site. (F,Sp,Su) Prerequisite: Reading Level 4 and Writing Level 4 and Department Approval Recommended: Have completed a minimum of 30 credits
HMFS206	Rooms Division Management	3	Reservation and sale of hotel rooms, operation of front office, review of check-in and check-out procedures, credit card processing, property security, daily audit and the importance of keeping accurate records. Includes yield management and determining room rates, forecasting based on statistical analysis, posting accounts and budgeting. (Sp) Prerequisite: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

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HMFS229	Convention/Meeting Management	3	Determining client needs, evaluating capability of facility and community resources and marketing for convention business is included. Methods of evaluating successful conventions and meetings are examined and the use of software programs to book events and maintain client records. (Sp) Prerequisite: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HMFS232	Food and Labor Cost Control	3	Strategies for making a profit and controlling food, beverage, and labor costs are examined. Includes discussion of quality versus cost issues and an analysis of records to detect problems. Includes examination of facility management strategies to reduce costs and save energy. Methods for increasing revenues are discussed and evaluated. (Sp) Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
HONR151	Honors Colloquy I	1	Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and the social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write essays reacting to each presentation. (F) Prerequisite Courses: None. Honors Program Approval Required Placement Scores: None
HONR152	Honors Colloquy II	1	Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and the social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write three substantive research papers. (F) Prerequisite Courses: None. Honors Program Approval Required Placement Scores: None
HONR155	Community Service Practicum I	1	A practicum course for freshman students requiring a minimum of 32 hours of volunteer service with a community agency of the student's choice and attendance at three classroom discussion sessions. Students will develop practical skills and evaluate their service in terms of its relevance to the community and their educational, career, and life goals. (Sp) Prerequisite: Honors Program Approval
HONR156	Community Service Practicum II	1	A practicum course for sophomore students requiring a minimum of 32 hours of volunteer service with a community agency of the student's choice and attendance at three classroom discussion sessions. Students will develop practical skills and evaluate their service in terms of its relevance to the community and their educational, career, and life goals. (Sp) Prerequisite: Honors Program Approval
HONR295	Honors Independent Study	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week on course work. A detailed proposal must be submitted by the student for approval by the Honors Program Director and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Honors Program Approval
HSAC090	ERESA Heating & Air Cond	8	This course for ERESA students is an introduction into basic electricity, heating, air conditioning, and sheet metal as it pertains to residential HVAC equipment installation and service. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite: ERESA Student
HSAH080	CCRESA PreAllied Hlth Car Prep	8	This course for CCRESA students is designed to present and explore basic concepts of biologic and physical sciences, medical terminology, introductory pathology, and fundamentals of human interactions necessary to pursue training as health care professionals. Students are enrolled in both fall and spring semesters. (F,Sp) Prerequisite Course: None. CCRESA Student
HSAH090	ERESA Health Occupations I	8	This course for ERESA students provides an overview of the health care industry, including medical ethics, trends in health care, and exploration of career options. It includes instruction in medical terminology as well as an introduction to anatomy and physiology, vital signs measurement, math used for conversions, and universal precautions/blood borne pathogen training. (F,Sp) (F,Sp) Prerequisite Course: None. ERESA Student
HSAH092	ERESA Health Occupations II	8	This second year course for ERESA students will teach acute care and rehabilitation knowledge and skills needed to deliver quality basic patient care as a nurse aide/patient care technician. This builds on the long-term care knowledge and skills already learned in the first year course. Students will also be given foundational instruction in medical terminology and will be introduced to the Electronic Health Record and its impact on health-career-related job responsibilities. Hands-on EHR experience is included. (F,Sp) Prerequisite Course: None. ERESA Student

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HSAM080	CCRESA Auto Service	8	This course for CRESSA students covers the four National Institute for Automotive Service Excellence requirements for training in brakes, suspension and steering, electrical, and tune-up/driveability. In addition, students will learn basic shop procedures as outlined in AUTO100 and basic training in engine overhaul. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite: CRESSA Student
HSAM090	ERESA Auto Mechanics	8	This course for ERESA students covers the four National Institute for Automotive Service Excellence requirements for training in brakes, suspension and steering, electrical, and tune-up/driveability. In addition, students will learn basic shop procedures as outlined in AUTO100 and basic training in engine overhaul. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite: ERESA Student
HSAM091	ERESA Automotive Technology II	8	This course for ERESA students covers the four National Institute for Automotive Service Excellence requirements for training in brakes, suspension and steering, electrical, and tune-up/driveability with an emphasis on steering and suspension systems. In addition, students will learn basic shop procedures as outlined in AUTO100 and basic training in engine overhaul. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite: ERESA Student
HSAT090	ERESA Architectural Drafting	8	This ERESa course focuses on residential architecture. Students will learn board drafting techniques, wall section components and building materials, and drafting conventions. Residential design and planning as well as model building methods will be studied and computer aided drafting (CAD) software will be used throughout the year. (F,Sp) Prerequisite: ERESA Student
HSBT090	ERESA Building Trades	6	This course teaches the basic skills needed to build a house including reading and interpreting architectural drawings, preparing the building site, introduction to and use of power tools, residential framing, interior carpentry, measuring, and applied mathematics. (F,Sp) Prerequisite: ERESA Student
HSCA090	ERESA Intro to Graph Design	8	This course for E.I.S.D. students introduces commercial art techniques for graphic arts pre-press production emphasizing studio skills, lettering, typography, and layout design. Includes studio tool and material usage, lettering and typography, computer-based page layout software, and use of design principles as related to layout composition. (F,Sp) Prerequisite: ERESA Student
HSCD080	CCRESA Child Development	8	This course of instruction for C.C.R.E.S.A. students provides a broad view of essential elements in early childhood education and care including the role of the early childhood education professional. Topics include health and safety, elements of quality, providing a supportive emotional environment, influences on children's learning including family and culture, and the importance of matching curriculum to development. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite Course: None. CCRESA Student
HSCJ070	Alma HS Crim Justice/Pub Svc	8	This course is designed for Alma High School students to explore the basic concepts and potential career opportunities in Criminal Justice. The course provides instruction in the areas of law enforcement, corrections, and report writing. Students are enrolled both fall and spring semesters to meet all course objectives for a total of 11 credits for the school year. (F,Sp) Prerequisite: Alma HS Student
HSCJ080	CCRESA Crim Justice/Pub Svc	8	This course is designed for CCRESA students to explore the basic concepts and potential career opportunities in Criminal Justice. The course provides instruction in the areas of law enforcement, corrections, and report writing. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite: CCRESA Student
HSCJ082	CCRESA Crim Justice/Pub Svc II	8	This course is for second year CCRESA students to expand on the basic concepts and potential career opportunities in Criminal Justice learned in the first year of this program. (F, Sp) Prerequisite: CCRESA Student
HSCJ090	ERESA Crim Justc/Public Svc I	8	This course is designed for ERESA students to explore the basic concepts and potential career opportunities in Criminal Justice. The course provides instruction in the areas of law enforcement, corrections, and report writing. Students are enrolled both fall and spring semesters to meet all course objectives for a total of 11 credits for the school year. (F,Sp) Prerequisite: ERESA Student

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HSCJ091	ERESA Intro Criminal Justice	3	An ERESA orientation course designed to provide students with a current, coordinated, and comprehensive overview of criminal justice as an institution and as a system. It will emphasize historical, philosophical, constitutional, and organizational perspectives. (F) Prerequisite: ERESA Student
HSCJ092	ERESA Crim Just/Law Enforce II	8	This course is for second year ERESA students to expand on the basic concepts and potential career opportunities in Criminal Justice learned in the first year of this program.(F,Sp) Prerequisite: ERESA Student
HSCJ093	ERESA Human Relations/Crim Jus	3	This ERESA course focuses on understanding those aspects of interpersonal relations most directly linked to attainment of organizational and individual goals in criminal justice work settings. (F(F) Prerequisite: ERESA Student
HSCS080	CCRESA Computer Support I	8	Security I first-year courses provide early middle college bound high school students with the foundational skills needed to enter into Security II second-year courses. These courses follow the Lansing Community College, Computer Networking & Cybersecurity Associate in Business Degree (1453). (F,Sp) Prerequisite: CCRESA Student
HSCS092	ERESA Computer Support	8	This course provides ERESA students with instruction in computer information systems, Windows, advanced microcomputer applications, and dBase programming. In addition, students work extensively on Microsoft Office Suite. Students are enrolled both fall and spring semesters to meet all course objectives for a total of 12 credits for the school year. (F,Sp) Prerequisite: ERESA Student
HSCT090	ERESA Construction Technology	8	This program provides an overview of the construction industry by presenting information in several related areas. Students will learn about construction safety, framing and foundation techniques; such as framing wall and floor systems, interior and exterior walls, ceilings, roofs and stairs. This includes material takeoffs and installation practices. (F, Sp) Prerequisite: ERESA Student
HSDC071	HSDC Team Time	0.25	Students will receive high school credit for developing skills in goal setting, decision making, career development and information technology. (Su, Fa, Sp) Prerequisite: H.S.D.C. Student
HSDC073	High School Science	0.5	This high school courses in this high school series will include: science, based courses such as high school chemistry, biology. Students will recieve high school credits and will satisfy specific high school graduation requirements. (Su) . Prequisite: H.S.D.C.
HSDM090	ERESA Design and Machining	8	This course will provide students with hands-on laboratory projects, career based education, and industrial skill sets needed in design and manufacturing. Career opportunities include Machine Tool Operations, CNC Programming and Operations, and Skilled Maintenance. Students will also have the opportunity to earn First Aid and CPR/AED certifications. (F, Sp) Prerequiiste: ERESA Student
HSDM091	ERESA Drafting/Design	6	This course is the drafting/CAD portion of the ERESA Design and Machining course. Combined with the machining course, HSDM 092, students will perform hands-on laboratory projects, career based education, and industrial skill sets needed in design and manufacturing. Career opportunities include Machine Tool Operations, CNC Programming and Operations, and Skilled Maintenance. Students will also have the opportunity to earn First Aid and CPR/AED certifications. (F, Sp) Prerequisite: ERESA Student
HSDM092	ERESA Machine Tool Operations	2	This course is the machine tool operations portion of the ERESA Design and Machining course. Combined with the drafting/CAD course, HSDM 091, students will perform hands-on laboratory projects, career based education, and industrial skill sets needed in design and manufacturing. Career opportunities include Machine Tool Operations, CNC Programming and Operations, and Skilled Maintenance. Students will also have the opportunity to earn First Aid and CPR/AED certifications. (F, Sp) Prerequisite: ERESA Student
HSDT090	ERESA Industrial Drafting	8	This course for ERESA students is centered around basic concepts of orthographic projection, sketching, lettering techniques and dimensioning. Emphasis will shift to more detailed work with orthographic projection, sections and auxiliary views, and preparation of welding or fabrication type drawings. Students are enrolled both fall and spring semesters. (F,Sp) Prerequisite: ERESA Student

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HSEC090	ERESA Computer Security I	8	This is the first course for the Early Middle College track for the Networking & Cybersecurity Associate in Business Degree (Curriculum Code: 1453). Students in the program are required to complete a 13 year of high school. The student receives practical, hands-on experience in installing, maintaining, and troubleshooting computer hardware and software. Emphasis is placed on the communication skills and the professionalism needed to become a successful Computer Support Technician. Students will be prepared to earn the CompTIA A+ certification. Upon completing the coursework successfully, students will receive the IT Foundations Certificate of Completion (Curriculum Code: 0766). (F,Sp) Prerequisite: ERESA Student
HSED080	CCRESA Teacher Preparation	8	This course provides CCRESA students with an overview of the foundations, philosophy, history and organization of education and an introduction to teaching as a profession. Students can gain hands-on experience working with a teacher in a classroom environment and learn techniques for positive discipline and building self esteem in young children. (F,Sp) Prerequisite: CCRESA Student
HSFS080	CCRESA Intro to Fire Science	8	This CCRESA course introduces the student to fire fighting with an overview of fire chemistry, fire fighting equipment, safety, organization, apparatus, fire service divisions, special rescue techniques, customer service, fire prevention, public education, and the future of the fire service. (F,Sp) Prerequisite: CCRESA Student
HSFS090	ERESA Intro to Fire Science	8	This ERESA course introduces the student to fire fighting with an overview of fire chemistry, fire fighting equipment, safety, organization, apparatus, fire service divisions, special rescue techniques, customer service, fire prevention, public education, and the future of the fire service. Students are enrolled both fall and spring. (F,Sp) Prerequisite: ERESA Student
HSFT090	ERESA Fashion Technology	8	ERESA students will learn entry level knowledge and skills of fashion industry. Students will study design; technology, manufacturing, materials and merchandising through lecture, demonstrations, and computer laboratory projects. Students are enrolled during both fall and spring. (F,Sp) Prerequisite: ERESA Student
HSGA090	ERESA-Computer Graph-Animation	8	This course introduces high school student to careers in the visual communication in art, drawing, animation, 3d modeling, and video games . In addition to traditional drawing work, students develop projects in a technical environment with hands-on training to create images in Photoshop, animation and interactivity with Flash, and three-dimensional models in Maya. (F,Sp) Prerequisite: E.I.S.D. Student
HSKN080	CCRESA Intro Sports Medicine	8	The course introduces CCRESA students to various careers in the field of Kinesiology, with emphasis on athletic training. Students will learn techniques for assessment, treatment, and rehabilitation of athletic injuries: lifestyles skills that lead to better health and fitness; and will be certified in CPR. (F,Sp) Prerequisite Course: None. CCRESA Student Placement Scores: Reading Level 5 and Writing Level 6
HSKN090	ERESA Sports Med Foundations	8	This course introduces ERESA students to various careers in the field of Kinesiology, with emphasis on athletic training. Students will learn techniques for assessment, treatment, and rehabilitation of athletic injuries; lifestyles skills that lead to better health and fitness; and will be certified in CPR and First Aid. (F,Sp) Prerequisite Course: None. ERESA Student Placement Scores: LCC Reading Level 5 and Writing Level 6 Recommended: BIOL 145 or equivalent
HSLE090	ERESA Law Enforcement	8	This course is designed for ERESA students to explore the basic concepts and potential career opportunities in Law Enforcement. The course provides instruction in the areas of law enforcement, such as theory of patrol, community policing, and CPR for health care professionals. Students are enrolled both fall and spring semesters to meet all course objectives for a total of 9.5 credits for the school year. (F, Sp) Prerequisite: ERESA Student
HSMA090	ERESA Mechatronics/Automation	8	After an introduction to industrial workplace safety, including the ability to earn First Aid and CPR/AED certifications, students will focus on the installation and repair of electrical, hydraulic, pneumatic and digital controls that operate automated mechanical and robotic systems. Prerequisite: ERESA Student

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HSMT090	ERESA Manufacturing Tech	1.5	This course for ERESA students is centered around basic concepts of manufacturing technology which are learned through a series of lectures, demonstrations, and manufacturing projects. Students are enrolled during both fall and spring semesters to meet all course objectives for a total of 12 credits for the school year. (F,Sp) Prerequisite: ERESA Student
HSTV090	ERESA TV/Video Production	8	This course is designed to provide E.I.S.D. students with an introductory experience to the process of electronic media design and production. Introduction to Television/Video Production places special emphasis on developing the student's written and performance capabilities in support of creating television/video communication. (F,Sp) Prerequisite: ERESA Student
HSWD090	ERESA Comp Graphic/Web Dsgn	8	An introduction to manipulation of photographic images and generation of images on the computer using design principles for the creation of effective presentations for the web with rich media content. Students will learn the entire process from concept to design and storyboarding, to structure, preparation, production, and programming. (F,Sp) Prerequisite: ERESA Student
HSWT090	ERESA Welding/Cutting	8	This course is for ERESA students interested in the industrial trades. Students will learn the basics of oxy-fuel welding and cutting, advanced arc welding, and gas metal arc welding through lectures and hands-on experience. Students are enrolled both fall and spring semesters to meet all course objectives for a total of 12 credits for the school year. (F,Sp) Prerequisite: ERESA Student
HSWT092	ERESA Welding/Cutting II	8	This course is for ERESA students interested in the industrial trades. Students will learn the basics of shielded metal arc welding and gas tungsten arc welding through lectures and hands-on experience. Students are enrolled both fall and spring semesters to meet all course objectives for a total of 12 credits for the school year. (F, Sp) Prerequisite: ERESA Student
HTEC051	TEC Seminar	.5 to 1	The seminar sessions will focus on mentoring, advising, academic support and intervention for each student.
HTEC053	TEC College Prep Math A	1	College Prep Math I B Course Description: In this course we will explore mathematical concepts that are foundational for success in algebra based math courses. Students will learn to use and understand the following five fundamental concepts: 1. Simplify expressions 2. Solve equations/inequalities 3. Use numerical representations 4. Use graphical representations 5. Use algebraic notation

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HTEC060	TEC Algebra II A	1	Algebra II Course Description: The goal of Algebra II is to build upon the concepts taught in Algebra I and Geometry while adding new concepts to the students' repertoire of mathematics. It is the purpose of Algebra II to give the students a rigorous understanding of the expectations included within it. It is also the goal of this model to help students see the connections in the mathematics that they have already learned. Finally, students will develop an understanding that algebraic thinking is an accessible and powerful tool that can be used to model and solve real-world problems. Becoming proficient in the use of a graphing calculator and of various subject related software exemplifies how technology will be integrated into this course. Algebra II includes a study of the real number system; first degree equations and inequalities; polynomial functions including higher order equations and inequalities; rational algebraic expressions and fractional equations; complex numbers; functions; logarithms; problem-solving techniques; applications of algebra in the areas of data analysis; probability; combinatorics; matrices; sequences and series; and if time permits: trigonometric ratios; trig functions; trigonometric graphs, identities, and equations. During this course, the student will demonstrate proficiency in: 1. Solving problems involving linear & quadratic equations 2. Solving problems involving polynomial & rational equations 3. Interpreting and representing data 4. Solving problems with logarithmic & exponential equations 5. Understanding the Complex Number System 6. Applying problem solving techniques 7. Solving problems involving arithmetic or geometric sequences 8. Solving problems involving trigonometric equations and identities 9. Graphing and analyzing the graphs of trigonometric functions
HTEC061	TEC College Prep English A	1	College Prep English 3a: Students will read complex texts, using comprehension strategies to determine meaning. Students will respond to the reading in a variety of ways including three types of writing: arguments, informative explanatory texts, and narratives. The focus will be on informational texts, in both reading and writing, and closely aligned with current topics in TEC science and social studies. Students will acquire new vocabulary and increase their understanding of standard written and spoken English. Students will practice a variety of communication skills: speaking, listening, using media and technology. The Early College Success Skills curriculum is interwoven with this course.
HTEC062	TEC Civics	1	Integrated social studies - Global Issues and Conflicts 3a: Students develop their abilities for deep thinking, critical analysis, thoughtful discussion and scholarship based on the Michigan Citizenship Collaborative Curriculum for 11th grade. This course will integrate key social studies concepts, skills, and expectations from civics identified in the Michigan Merit Curriculum. Students will deepen their abilities to communicate social studies concepts through writing, discussion, analysis of sources, and decision-making. The Early College Success Skills curriculum is interwoven with this course.
HTEC063	TEC - Integrated Science A	1	Scientific Thought and Inquiry 1: Cross-cutting concepts of science, including force, energy transfer, the molecular composition of matter and chemical change are explored through laboratory investigations, computer simulations, and research, with a focus on application of scientific concepts to earth science and environmental issues and the collection and analysis of data to further develop conceptual understanding. Students will deepen their abilities to think analytically and to communicate scientific concepts through writing and discussion. The Early College Success Skills curriculum is interwoven with this course.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HTEC064	TEC Pre Calculus A	1	1st Semester Precalculus Course Description: This accelerated course is designed for students interested in pursuing a math-related curriculum in college. Since this course is designed to prepare students for Calculus, the focus will be on using mathematical models to represent real world situations and further develop students' problem solving and critical thinking skills. Becoming proficient in the use of a graphing calculator and of various subject related software exemplifies how technology will be integrated into this course. Topics include functions (symbolic, tabular, and graphical perspectives), complex numbers, and linear regression. Precalculus is a fast-paced course. The difficulty level of the material increases significantly throughout the semester. Students should be prepared to be challenged and to work hard. Students are encouraged to form study groups with peers, practicing beyond daily assignments in an effort to master skills.
HTEC065	TEC US and Global Studies A	1	US and Global Issues Integrated Social Studies. Students develop their abilities for deep thinking, critical analysis, thoughtful discussion and scholarship through an integrative social studies focus that broadens students' ability to think intelligently about the present based on what they have learned of the past and the profound interconnection between history, geography, economics and civics. Students will deepen their abilities to communicate social studies concepts through writing, discussion, analysis of sources, and decision-making. The Early College Success Skills curriculum is interwoven with this course.
HTEC068	TEC Economics	1	TEC Economics is a one semester course that covers a broad array of economic topics. The course will encourage economic and critical thinking strategies as well as the analysis of information and the use of economic graphs in order to encourage rational decision making. Microeconomic, macroeconomic and personal finance will all be covered in this course. This course will meet the State of Michigan requirements for high school economics, which focuses on the market economy, the national economy, the international economy, and an introduction to personal finance.
HTEC073	TEC Chemistry A	1	This high school courses in this high school series will include: science, based courses such as high school chemistry, biology. Students will recieve high school credits and will satisfy specific high school graduation requirements. (Su) . Prequisite: Early College Student.
HTEC078	TEC - Physics A	1	The focus of this course is to introduce students to concepts in physics and the application of mathematics to validate data obtained from laboratory exercises. The content of this course will include the application of scientific methods and classical Newtonian physics that includes linear motion, two-dimensional motion, Newton's laws of motion, applied forces, impulse and momentum and rotational motion. Experimentation will be a component of the course, both as an avenue to gain conceptual understanding and to learn how to function in a college physics laboratory. Using this approach to learn science, students should develop scientific reasoning skills necessary to problem-solve, apply scientific processes to real world situations and develop a scientific perspective.
HUMS120	Masterpieces of Art & Music	4	This course is an introduction to the masterpieces of art and music from ancient to modern times. Artistic and musical innovations and contributions from Europe and America will be studied. The continuing influence and validity of art and music from the past on contemporary developments will be explored. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) Course Note: 1) No art or music background required. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HUMS125	Japan: Past and Present	4	This course traces the development of Japan's cultural tradition with strong emphasis on history, religion, literature, and the arts. Further, this course demonstrates that modern Japan can best be understood in light of its distinctive traditions. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
HUMS140	Art of Being Human	4	Students will analyze human experience and examine their worldview through an interdisciplinary exploration that may include art, dance, history, literature, music, philosophy, religion, and/or theater. An active learning environment encourage self-discovery and understanding of the issues and concerns found in the Humanities and the Arts. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HUMS160	Mythology	4	Classical Greek and Roman myths constitute half of the course with the remainder chosen from at least two of the following areas: African, American, Far Eastern, Medieval European, Near Eastern, or Norse. Reading and analysis of primary sources in translation and their cross-cultural comparison are emphasized. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HUMS211	Art History to the Renaissance	4	Surveys the history of painting, sculpture, and architecture of world civilizations from preliterate times to the 15th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Fulfills general HUMS transfer requirements.
HUMS212	Art Hist from the Renaissance	4	Surveys the history of painting, sculpture, and architecture of world civilizations from the 15th to the 20th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F,Sp) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: Fulfills general HUMS transfer requirements
HUMS213	World Civilizations to 1600	4	Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas to approximately the 17th century. Emphasizes the contributions of early civilizations to the creativity, richness, and diversity of the human condition. (F,Sp,Su) Prerequisite Course: None. Prerequisite Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HUMS214	World Civilizations from 1600	4	Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition.(F,Sp,Su) Prerequisite Course: None Prerequisite Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HUMS215	American Cultural Experience	4	This course will explore the cultural foundations of the United States from the period of exploration to the present. This is an interdisciplinary course which examines central themes of American culture and their representation in history, literature, art, philosophy, and religion. (F,Sp) Prerequisite Courses: None Placement Scores Reading Level 5 and Writing Level 6
HUMS216	Contemporary Art	4	This course provides an overview of contemporary art in various media and examines theoretical and cultural influences on art from the late 20th century to the present. Students will be able to recognize and interpret most important aspects of contemporary art and contemporary visual culture. (F, Sp, Su) Prerequisite: Reading Level 5 and Writing Level 6 Course Notes: 1) Formerly ARTS 210. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
HUMS260	Ancient Egypt	4	This course explores developments in Egyptian art and architecture, religion and kingship. Pyramids, tombs, hieroglyphs and the land of Egypt are emphasized. Great discoveries and discoverers in archaeology past and present are also featured. (F, Sp) Prerequisite: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131).
HUMS295	Ind Study in Humanities	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HUSE100	Introduction to Human Services	3	This course presents an overview of human services evolution that impact social welfare policies on services provided and the populations served. Emphasis is on community, clients, trends, ethics, and skills used in diverse settings. The approach is generalist in nature. This course complies with the Ethical Standards, National Organization of Human Services. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4
HUSE105	Personal Dynamics/Interviewing	4	The nature of personal development, knowledge and values are examined. The course integrates diversity issues with the demonstration of the knowledge, skills, and values of the "helping interview" through structured exercises and role playing. This course complies with the Ethical Standards of the National Organization of Human Services. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: Minimum 2.5 in (HUSE 100 or SOWK 101)
HUSE110	Child Abuse and Neglect	3	This course reviews the history and scope of child abuse and neglect, including socioeconomic and psychological factors. It explores the world of abnormal rearing, roles of community agencies and disciplines, approaches to treatment and prevention, coordination of cases and services, and legal aspects and the law. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: Minimum 2.5 in HUSE 105
HUSE112	Understanding Substance Abuse	4	Students learn multiple theories, definitions and factors that describe and explain addiction. The history and legislative impact is studied. Issues and treatment regarding addiction and special populations are discussed. Ethical issues, credentialing, professional competency and responsibility, confidentiality and commitment to the respect and dignity of the consumer/client's changing paradigms and promising practice are explored across the continuum of care. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4
HUSE242	The Family: Addiction/Violence	3	This course provides a holistic conceptual framework to understanding the interplay of addiction with violence across the family life cycle. Attention is brought to the biological, socioeconomic, cultural and psychological factors of chemical dependency and family violence. Assessment tools, intervention techniques and the role of treatment and broad spectrum human services applications and interventions are discussed. (F, Sp) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Recommended: Minimum 2.5 in HUSE 105 and HUSE 112
HUSE282	Human Services Practicum I	4	This course combines classroom training with beginning field experience (10 hours per week) in a community agency with exposure to community structure, funding sources and the internal working of human services organizations. Emphasis is on the development of professional skills to interact effectively with systems and individuals while following professional ethics and making ethical decisions. (F) Prerequisite Courses: Minimum 2.5 in (GERO 100 and HUSE 100 and HUSE 105 and HUSE 242 and Specialization Courses) and Minimum 2.0 in ENGL 121. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
HUSE284	Human Services Practicum II	4	This course combines classroom with advanced field experience (10 hours per week) in a community agency. Emphasis is on communications in diverse settings with diverse populations. Analysis of services identifies systems, people, and resources to mobilize and link them to provide quality services. Career subjects are also discussed. (Sp) Prerequisite Course: Minimum 2.5 in HUSE 282. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
HUSE293	Human Services Special Topics	.25 to 4	A number of brief topics related to the human service field will be taught in this course. Topics will be of interest to current students, members of the community, paraprofessionals and professionals working in the field. Specific, up-to-date content will vary with each offering. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
HUSE294	Human Services Special Topics	.25 to 2	A number of brief topics related to the human service field will be taught in this course. Topics will be of interest to current students, members of the community, paraprofessionals, and professionals working in the field. Specific, up-to-date content will vary with each offering. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HUSE295	Peer Support Specialist Trng	3	Mental health recovery and implementation activities are demonstrated based on knowledge, skills and values. Individuals attending have a serious mental illness, past experience in receiving public mental health services and are working in community mental health. Curriculum includes structured exercises in ethics, problem solving, effective listening facilitating recovery dialogs, wellness, Medicaid reimbursement, person-centered planning and self-determination. (F,Sp,Su) Prerequisite Course: None. Requires approval of Michigan Department of Health and Human Services Placement Score: None
HUSE297	Human Services Indep Study	1 to 3	This course includes special research, directed study, or service-learning projects in human services areas, such as gerontology, social work, substance abuse, or related areas. It requires at least 16 hours of independent work for each credit. A learning contract specifying objectives, activities and outcomes is required. (F,Sp) Prerequisite Course: None. Program Approval is required. Placement Score: None
HVAC100	Fundamentals of HVAC	3	This course is an introduction to the mechanical refrigeration cycle and its individual components. Compressors, evaporators, condensers and metering devices as well as their functions are covered in detail. Exercises in psychrometrics and an introduction to system design are also covered. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Course Note: $4 of the Course Fee is non-refundable.
HVAC102	Industrial/Construction Safety	2	This course covers safety in the industrial workplace and on construction worksites. Included are local, state and federal safety regulations. The focus will be on the prevention of accidents but will teach the correct response if an accident should occur. First aid, CPR/AED certificates will be issued upon successful completion. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Course Notes: 1) This course requires students to be certified in CPR and First Aid as part of the course grade. Training will occur as part of traditional on-campus sections. Online students have the option of attending CPR and First Aid sessions at LCC's West Campus. Students who cannot travel to LCC will need to make other arrangements to become certified. Additional costs may be incurred if the scheduled CPR and First Aid sessions are not used. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website. 3) Online students CANNOT qualify for the OSHA-10 certification due to OSHA limitations. Students requiring OSHA-10 Certification should enroll in one of the lab/lecture sections. $11 of the Course Fee is non-refundable.
HVAC110	Applied Electricity I	3	An introduction to basic electricity (AC and DC) using both theory and applied study methods. Topics will include electrical components, symbols, basic schematic diagrams, Ohm's Law applied to series and parallel circuits and motor types and usages. In conjunction with lab exercises, meters and their proper usage will be covered. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (HVAC 102 or DCTM 102 or ELTE 102 or METS 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: $4 of the Course Fee is non-refundable.
HVAC111	Applied Electricity II	3	The study of motors with an emphasis on theory, troubleshooting and servicing. Motor controls, control circuits, protection devices and discussion of energy conservation as related to motors will be covered in detail. (F,Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 100 and HVAC 110) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC113	HVAC/R Piping	3	This course is designed to teach students about the common types of pipes used in the HVAC/R industry. Topics will include safety, tools and fasteners, common types of pipe, pipe joints, pipe-fittings, and general guidelines for working with pipe and tubing. Hands-on experience with piping is included. (F, Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 102 or DCTM 102 or ELTE 102 or METS 102 or WELD 102 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 Course Note: $5 of the Course Fee is non-refundable.
HVAC115	Sheet Metal Fab & Installation	2	Designed to aid the installer in the skills and techniques for the proper duct sizing, layout, and installation of a residential air distribution system. Topics include sheet metal layout, identification of sheet metal fittings, and their use. Safe and proper use of tools and equipment used in the trade. (F, Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 102 or DCTM 102 or ELTE 102 or METS 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: $4 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HVAC120	Heating I	3	This course covers basic construction and function of components in residential gas and oil fired furnaces with detail on theory, application, troubleshooting, and servicing standard heating systems. Installation procedures and codes are also covered. Additional equipment studied will include humidifiers, air cleaners and vent dampers. (F,Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 100 and HVAC 110) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC130	Air Conditioning I	3	This course covers the fundamentals and principles of residential air conditioning systems. Students will learn soldering and brazing of tubing, wiring, component testing, evacuation procedures, charging and maintenance of both split systems, as well as small packaged units. (F,Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 100 and HVAC 110) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $34 of the Course Fee is non-refundable.
HVAC170	Special Topics in HVAC/R	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Heating, Ventilation, Air Conditioning and/or Refrigeration, and other related topics. Specific content may vary with each offering but will be related to HVAC/R Technology and the profession. (F,Sp,Su) Prerequisite: Determined by Section
HVAC201	Mechanical Code	4	A fundamental course designed to acquaint the student with the methods and techniques used in field inspection of mechanical systems. The Michigan Mechanical Code and excerpts from the International Fuel Gas Code and Michigan Residential Code will be discussed. (Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 120 and HVAC 130) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $6 of the Course Fee is non-refundable.
HVAC220	Heating II	3	This course covers the fundamentals and principles of electronic ignition systems including troubleshooting and servicing. The major emphasis is placed on high efficiency and condensing furnaces to include sequence of operation, troubleshooting, servicing, and proper installation. (F,Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 111 and HVAC 120) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC221	Introduction to Hydronics	3	Covers hot water and steam residential heating systems, piping and all accessories, safety controls, expansion tanks, zone valves, installation procedures and codes. Students perform testing, troubleshooting, adjusting and servicing of components to insure maximum efficiency. (F,Sp) Prerequisite Course: Minimum 2.0 in HVAC 120 Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC230	Air Conditioning II	3	This course covers advanced air conditioning, light commercial equipment, water cooled units, cooling towers, and the wiring of both control and line voltage circuitry. The latest in test equipment and meters will aid the student in becoming proficient in servicing and maintaining commercial equipment. (F,Sp) Prerequisite Courses: Minimum 2.0 in (HVAC 111 and HVAC 130) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC231	Heat Pump	3	This course deals entirely with heat pumps (air-to-air, water-to-air) and their installation, servicing, proper application or heat pump components, and extensive wiring schematics. (Sp) Prerequisite Course: Minimum 2.0 in HVAC 130 Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC240	Refrigeration I	3	This course includes domestic refrigeration as applied to refrigerators, freezers and de-humidifiers. Course content includes applications, operation and servicing of sealed systems, electrical and cabinet styles. (F) Prerequisite Course: Minimum 2.0 in (HVAC 230 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.
HVAC241	Refrigeration II	3	This course provides instruction in light commercial refrigeration to include low and medium temperature applications as applied to ice machines, walk-ins, reach-ins, and display cases. (Sp) Prerequisite Course: Minimum 2.0 in HVAC 240 Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $4 of the Course Fee is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
HVAC251	Fund of Direct Digital Control	3	Basic fundamentals and principles of direct digital controls will be covered through demonstrations of computer basics, control strategies for computer based energy management systems, and installation components according to industry standards. (Sp) Prerequisite Course: Minimum 2.0 in (HVAC 230 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: $5 of the Course Fee is non-refundable.
HVAC280	EPA 608 Certification Review	1	This course prepares students for the EPA Section 608 Certification test which is required to work on appliances containing CFC, HCFC or HFC refrigerants. This course will not certify technicians in EPA Section 609 - Automotive Air Conditioning. Students who successfully complete the course will take the proctored EPA Section 608 Certification Test. (F,Sp) Prerequisite Courses: None Placement Scores: None Recommended: HVAC 130 or HVAC field experience Course Note: $30 of the Course Fee is non-refundable.
HVAC290	HVAC Internship	2 to 4	This course provides Heating, Ventilating, Air Conditioning and Refrigeration students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (F, Sp, Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
IDMS150	Sonographic Directed Study	1 to 5	Provides selection of content from the Diagnostic Medical Sonography curriculum to update or enhance current knowledge and skill for returning students and health care professionals. Through evaluation of previous learning, examinations, self study, and scheduling into needed lectures, labs and clinical experience, students are advanced placed or readmitted into the Diagnostic Medical Sonography program. (As Needed) Prerequisite Course: None. Program Approval is required. Placement Score: None
IDMS169	Intro to Sonographic Scanning	2	Sonography students are introduced to scanning and sonographic positioning as well as imaging techniques. Normal anatomy of the abdomen including liver, biliary tree, kidneys, spleen, and pancreas will be explored. (Su) Prerequisite Course(s): None. Admission to Diagnostic Medical Sonography Program required. Placement Score(s): Reading Level 5 and Writing Level 6 Co-Requisite Course(s): IDMS 200 and IDMS 270
IDMS200	Sonographic Introduction	2	This course is an introduction to sonography including equipment history, criteria, limitations of ultrasound, and sonographer ethics. General information is provided regarding patient preparation, history/clinical correlation, and basic nursing care specific to ultrasound. Strong emphasis is placed on terminology and abbreviations most commonly used with ultrasound. (Su) Prerequisite Course: None. Admission to Diagnostic Medical Sonography Program required. Placement Scores: Reading Level 5 and Writing Level 6 Co-Requisite Courses: IDMS 169 and IDMS 270
IDMS201	General Sonography I: Abdomen	4	This course provides the student with cross-sectional anatomy and pathology as it relates to sonographic scanning of the abdomen, abdominal vessels, thyroid, prostate, scrotum, breast, and neurosonology of the neonate. (F) Prerequisite Courses: Minimum 2.5 in (IDMS 169 and IDMS 200 and IDMS 270) Placement Scores: None Co-Requisite Courses: IDMS 202 and IDMS 234 and IDMS 271 and IDMS 280
IDMS202	OB/GYN Sonography I	4	This course provides the student with cross-sectional anatomy and pathology as it relates to gynecological and obstetrical sonography. Fetal anatomy and appearance will be presented. (F) Prerequisite Courses: Minimum 2.5 in (IDMS 169 and IDMS 200 and IDMS 270) Placement Scores: None Co-Requisite Courses: IDMS 201 and IDMS 234 and IDMS 271 and IDMS 280
IDMS234	Sonographic Physics	2	The student will study the fundamental principles of acoustical physics, how sound is produced and manipulated, and how it reacts in various mediums. (F) Prerequisite Courses: Minimum 2.5 in (IDMS 169 and IDMS 200 and IDMS 270) Placement Scores: None Co-Requisite Courses: IDMS 201 and IDMS 202 and IDMS 271 and IDMS 280
IDMS245	Sonographic Instrumentation	2	The student will be introduced to the mechanics of A-Mode, M-Mode, Doppler, and Real-time ultrasound equipment. Accessory equipment such as the camera, transducer, and cathode ray tube will be presented. Methods of quality assurance will also be presented. (Sp) Prerequisite Courses: Minimum 2.5 in IDMS 234 Placement Score: None Co-requisite Courses: IDMS 265 and IDMS 266 and IDMS 281

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
IDMS250	Vascular Technology I	6	The student will study the physical principles of venous fluid dynamics and Doppler measurement analysis with its relationship to physiology and pathology, including risk factors, disease processes, correlative tests, and treatments. The student will review of the circulatory system and vascular anatomy including, carotid arteries, intracranial blood vessels, upper and lower extremity veins and penis.(F,Sp) Prerequisite Course: None. RDMS or RT(S) credential or graduated from an accredited ultrasound program and current sonography employment and Department Approval Placement Score: None Placement Scores: None Co-Requisite Course: IDMS 255 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
IDMS251	Vascular Technology II	6	The student will study arterial fluid dynamics and Doppler measurement analysis with its relationship to physiology and pathology, including risk factors, disease processes, correlative tests, and treatments. The student will review vascular anatomy including, upper and lower extremity arteries and abdominal vasculature. Bypass grafts, stents and hemodialysis access will be studied. Quality measurements and safety are reviewed. (F,Sp) Prerequisite Course: Minimum 2.5 in IDMS 250. Program Approval is required. Placement Score: None Co-Requisite Course: IDMS 256 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
IDMS255	Vascular Scan Lab I	2.5	Students will learn scanning and sonographic positioning as well as imaging techniques in color and spectral Doppler as related to the vascular system. Students will identify normal vascular anatomy including carotid, circle of Willis, upper and lower extremity veins and impotence testing.(F,Sp) Prerequisite Course: None. ARDMS or RT(S) credential or graduated from an accredited ultrasound program and current sonography employment and Program Approval Placement Score: None Co-Requisite Courses: IDMS 250
IDMS256	Vascular Scan Lab II	2.5	Students will learn scanning and sonographic positioning as well as imaging techniques in color and spectral Doppler, plethesmography and segmental pressures as related to the vascular system. Students will identify normal vascular anatomy including, aorta, IVC, renal vasculature, portal system, upper and lower extremity arteries, and Hemodialysis grafts. (F,Sp) Prerequisite Course: Minimum 2.5 in IDMS 255. Program Approval is required. Placement Score: None Co-Requisite Course: IDMS 251
IDMS265	General Sonography II	4	The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the abdomen, venous system, and small parts. (Sp) Prerequisite Course: Minimum 2.5 in IDMS 201 Placement Score: None Co-requisite Courses: IDMS 245 and IDMS 266 and IDMS 281
IDMS266	OB/GYN Sonography II	4	The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the obstetric and gynecologic patient. (Sp) Prerequisite Course: Minimum 2.5 in IDMS 202 Placement Score: None Co-requisite Courses: IDMS 245 and IDMS 265 and IDMS 281
IDMS270	Sonographic Positioning I	2.5	Sonography students continue to learn scanning and sonographic positioning as well as imaging techniques. Normal anatomy of the abdomen including liver, biliary tree, kidneys, spleen, and pancreas will be explored. The great vessels will be introduced including the aorta, celiac axis, superior mesenteric artery, interior vena cava and related arteries. (Su) Prerequisite Course: None. Admission to Diagnostic Medical Sonography Program is required. Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Courses: IDMS 169 and IDMS 200
IDMS271	Sonographic Positioning II	1.5	Sonography students continue to practice sonographic positioning and scanning techniques. Normal and abnormal anatomy of the abdomen including liver, biliary tree, aorta, kidney, spleen, transabdominal pelvis, thyroid, musculoskeletal and gravid uterus will be explored. (F) Prerequisite Course: Minimum 2.5 in IDMS 270 Placement Scores: None Co-Requisite Courses: IDMS 201 and IDMS 202 and IDMS 234 and IDMS 280

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
IDMS280	Clinical Experience I	6	First course in a three-semester sequence of clinical application in diagnostic medical sonography. Clinical experience is provided under the direct supervision of an ARDMS Registered Sonographer. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (F) Prerequisite Courses: Minimum 2.5 in (IDMS 169 and IDMS 200 and IDMS 270) Placement Score: None Co-requisite Courses: IDMS 201 and IDMS 202 and IDMS 234 and IDMS 271
IDMS281	Clinical Experience II	7	Building on material presented in IDMS280, this is the second course in a three-semester sequence in diagnostic medical sonography. Clinical experience is provided under the direct supervision of an ARDMS Registered Sonographer. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Sp) Prerequisite Course: Minimum 2.5 in IDMS 280 Placement Score: None Co-requisite Courses: IDMS 245 and IDMS 265 and IDMS 266
IDMS282	Clinical Experience III	8	Based on material presented in IDMS281, this is the last course in a three-semester sequence of clinical application in diagnostic medical sonography. Clinical experience is provided under the direct supervision of an ARDMS Registered Sonographer. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Su) Prerequisite Courses: Minimum 2.5 in (IDMS 234 and IDMS 245 and IDMS 265 and IDMS 266) Placement Score: None
IDMS295	DMS Special Topics	.25 to 8	This course offers students the opportunity to learn new diagnostic medical sonography career skills and knowledge. Specific up-to-date content will vary with each topic presented and will be related to diagnostic medical sonography careers. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
INSU105	Prin of Prop & Liability Ins	3	This course will help students strengthen critical written and oral communication and analytical skills, and identify sources for gaining general insurance information, including risk management and regulation of insurance companies. This course will be a useful tool as students prepare for the AINS 21 national exam, administered by The Institutes.(F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)
INSU110	Personal Insurance	3	This course will help students strengthen critical written and oral communication and analytical skills, and identify sources for gaining personal insurance information, including home, auto, life, health and retirement options. This course will be a useful tool as students prepare for the AINS 22 national exam, administered by The Institutes. (Sp) Prerequisite: Reading Level 5 and Writing Level 6.
INSU125	Commercial Insurance	3	This course will help the student strengthen critical communication and analytical skills, and identify sources for gaining commercial insurance information, including coverage for buildings, property, workers compensation, auto, etc. This course will be a useful tool as students prepare for the AINS 23 national exam, administered by The Institutes. (Sp) Prerequisite: Reading Level 5 and Writing Level 6.
INSU175	Intro to Financial Advising	3	This course will help students develop analytical skills in financial advising for a career the insurance industry. This course will cover all areas including estate planning, life insurance, annuities, retirement planning, and health insurance options. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
INSU250	Claims and Underwriting	3	This course is an overview of the principles and practices of claims and commercial underwriting. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in INSU 125 Placement Scores: Reading Level 5 and Writing Level 6
INSU260	Life/Health Insur Licensing	2	This course will prepare individuals for the State of Michigan life/health licensing exam and provide them with the paperwork required to take the State licensing test. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6
INSU270	Property/Casualty Insur Licens	2	This course will prepare individuals for the State of Michigan property/casualty licensing exam and provide them with the paperwork required to take the State licensing exam. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6
INSU285	Insurance Agency Operations	3	This course is an overview of agency operations including financial, marketing, management, IT, regulations, leadership, time management, and strategic operations. (F,Sp,Su) Prerequisite Courses: (Minimum 2.0 in INSU 105 and 110) and (minimum 3.0 in INSU 125) Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
INSU295	Insurance Internship	3	This course is an opportunity for students to work with Lansing area insurance companies as a team member to explore various careers within the industry. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (INSU 105 or INSU 110 or INSU 125) Placement Scores: Reading Level 5 and Writing Level 6
IRXT105	Introduction to Imaging	3	History of the radiologic technologist profession. Fundamentals of the role of the radiographer in the health care industry including professional conduct and responsibilities of the radiographer. Ethical and legal issues in specific to radiography. Exploration of principles, practices and policies of radiology departments, modalities, and health care organizations. Basic medical terminology specific to the field of radiography. Introduction to technical factors that affect radiographic exposure. This course includes an on-site orientation to the assigned clinical setting. (F) Prerequisite Course: Minimum 2.0 in MATH 122 or STAT 170 or STAT 215 or Math Level 5 noted below. Admission to the Radiologic Technology Program is required. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 5.
IRXT111	Radiographic Positioning I	5	Student radiographers are introduced to radiographic positioning of the upper and lower extremity, chest, abdomen, bony thorax, pelvis, and spine. Associated topographic, skeletal, chest, and abdominal anatomy is studied. A laboratory experience is provided to evaluate the student skills in performing each position/projection. (F) Prerequisite Course: None. Admission to Radiologic Technology Program is required. Placement Score: None
IRXT112	Radiographic Positioning II	5	A continued study of routine radiographic positioning with the addition of fluoroscopic procedures. Included are studies of the skull, G.I. tract, G.U. tract, myelography, and bronchography. In addition, various contrast media are studied. Laboratory experiences are provided to evaluate student skills in performing selected position/projections. (Sp) Prerequisite Course: Minimum 2.5 in IRXT 111 Placement Score: None
IRXT116	Patient Care in Radiography	4	Concepts of optimal care for the physical and psychological needs of the patient and family. Fundamental procedures for routine patient identification, patient education, communication, standard precautions, aseptic techniques, infection control, venipuncture, and vital signs. Emergency patient care procedures are studied. Examination of the impact of a patient's beliefs and culture on health care. CPR and BLS certification included. Clinical orientation at a college affiliate site and laboratory activities are included. (F) Prerequisite Course: None. Admission to the Radiologic Technology Program is required. Placement Score: None
IRXT123	Radiographic Independent Study	1 to 4	Provides selection of content from the Radiologic Technology curriculum to update or enhance current knowledge and skill for returning students and health care professionals. Through evaluation of previous learning, examinations, self study, and scheduling into needed lectures and labs students are advanced placed or readmitted into the Radiologic Technology Program. (F,Sp,Su) Prerequisite Course: None. Program Approval is required. Placement Score: None
IRXT140	Image Analysis	2	Analysis of radiographic images. Included are the importance of optimal imaging standards, discussions of problem-solving techniques for image evaluation and the factors that can affect image quality. Discussion of implications of patient care and patient dose. Knowledge of procedures and characteristics of image characteristics. Emphasis on appropriate corrective action. Actual images will be included for analysis. (Sp) Prerequisite Course: Minimum 2.5 in IRXT 111 Placement Score: None
IRXT144	Digital Imaging and Exposure	2	Understanding of the components, principles and operation of digital imaging systems found in diagnostic radiology. Factors that impact image acquisition, display, archiving and retrieval are discussed. Principles of digital system quality assurance and maintenance are presented. Examination of technical factors that govern radiographic exposure and affect the image production process. (Sp) Prerequisite Course: Minimum 2.5 in IRXT 105 Placement Score: None
IRXT170	Clinical Practice I	4	This course is first in a two-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual semester with a ratio of one credit hour to four clinical clock hours. (Sp) Prerequisite Course: Minimum 2.5 in IRXT 111 Placement Score: None
IRXT172	Clinical Practice II	6	Second in a two-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Su) Prerequisite Course: Minimum 2.5 in IRXT 170 Placement Score: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
IRXT200	Intro to Radiologic Pathology	2	Emphasizes how disease processes are diagnosed radiographically and the relationship of the radiographic appearance of the disease to its anatomic, physiologic, and pathologic characteristics. The etiology, treatment, and resolution of each disease is discussed with an attempt to relate more recent advances in these areas. (Sp) Prerequisite Course: Minimum 2.5 in IRXT 105 Placement Score: None
IRXT214	Comprehensive Experience I	6	First in a two-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (F) Prerequisite Course: Minimum 2.5 in IRXT 172 Placement Score: None
IRXT215	Comprehensive Experience II	6	Second in a two-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Sp) Prerequisite Course: Minimum 2.5 in IRXT 214 Placement Score: None
IRXT222	Radiobiology and Protection	2	This course focuses on the rationale for good radiation hygiene and methods used to protect the patient and technologist from radiation exposure. Current theories and events regarding the physiological effects of ionizing radiation are also explored. (F) Prerequisite Course: Minimum 2.5 in IRXT 105 Placement Score: None
IRXT224	Radiologic Physics	4	Basic physical principles, measurement, structure of matter, electrostatics and magnetism, are related to the radiologic process. A study of elementary electricity and the operation of the x-ray circuit are presented. Examination of design and function of radiographic, fluoroscopic and mobile equipment. Finally, advanced topics regarding the formation of radiation and care of the X-ray tube are studied. Discussion of quality assurance and quality control. (F) Prerequisite Course: Minimum 2.5 in IRXT 105 Placement Score: None
IRXT280	Radiologic Tech Board Review	2	This course is designed to help prepare students for the American Registry of Radiologic Technologist (ARRT) national board exam. The course is divided into weekly assignments covering material that was presented throughout the previous year's radiography courses. D2L will be utilized heavily in this course to prepare students for computer testing and reviewing of these materials. (Sp.) Prerequisite Course: Minimum 2.5 in IRXT 214 Placement Score: None
IRXT295	Radiologic Tech Special Topics	.25 to 8	This course offers students the opportunity to learn new radiologic technology career skills and knowledge. Specific up-to-date content will vary with each topic presented and will be related to radiologic technology careers. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
ISCI121	Integrated Sci for Education I	4	The first of two general science courses focusing on the fundamental behavior of matter and energy using a historical and environmental context. Science processes, methods, and reasoning skills are emphasized throughout. Experiments and hands-on activities are integrated with lecture topics. Recommended for education majors. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: One option for the required class project involves a 12-hour (1-hour per week) experience in an elementary school classroom.
ISCI122	Integrate Sci for Education II	4	The second of two general science courses focusing on the biological and ecological nature of our universe, using a historical and integrative approach. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F,Sp) Prerequisite: Minimum 2.0 in ISCI121 and Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106). Course Note: One option for the required class project involves a 12-hour (1-hour per week) experience in an elementary school classroom.
ISCI131	Integrated Physical Science	4	A general education course designed to provide students with a basic understanding of the methods and applications of science. Topics include basic chemistry, thermodynamics, the hydrologic cycle, earth science, climate, and weather. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and (Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
ISCI245	S.T.E.M. Workplace Practices	4	This course will introduce students to vital concepts encountered by employees working in advanced technology regulated environments within the emerging global economy. This covers four main areas of working in an advanced technology environment: process control, safety and security, legal and ethical Issues, and essential math and science skills. The lab work emphasizes systems thinking and continuous improvement concepts discussed during lecture. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 and (Math Level 5 or MATH 109 concurrently or MATH 112 concurrently) Recommended: A science laboratory course
JAPN121	Elementary Japanese I	4	First course of a two-semester sequence in elementary Japanese. Students gain basic knowledge of communication skills through speaking, reading, writing, and listening comprehension. Practical communication is emphasized. Japanese culture will be introduced through multi-media presentations. Hiragana and Katakana syllabaries and basic Kanji are introduced. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
JAPN122	Elementary Japanese II	4	Second course of a two-semester sequence in elementary Japanese. Students receive more practice in Japanese for practical communication. Develops speaking, reading, writing, and listening skills. Previously acquired knowledge and skills are refined and ability to communicate in Japanese is increased. Emphasis is on practical communication. 100 Kanji will be introduced. Japanese culture will be introduced through multi-media presentations. (Sp) Prerequisite Course: Minimum 2.0 in JAPN 121 or equivalent. Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
JAPN201	Intermediate Japanese I	4	First course of a two-semester sequence in intermediate Japanese. Includes introduction of more advanced grammar, vocabulary building, composition, group discussions, and more information on Japanese culture and everyday life. Emphasis is on practical communication in Japanese in Japanese. Additional 150 Kanji will be introduced. (F) Prerequisite Courses: Minimum 2.0 in JAPN 122 or equivalent Placement Scores: Reading Level 5 or ENGL 098 or ENGL 099 or NCSS 101 concurrently
JAPN202	Intermediate Japanese II	4	Continuation of JAPN201. Includes more advanced grammar, intensive vocabulary building, writing composition, reading contemporary materials, discussions, and student presentations of Japanese language or culture. Additional 150 Kanji will be introduced. Natural and practical communication will be emphasized. Various aspects of Japanese culture will be introduced through multi-media presentations. (Sp) Prerequisite: Minimum 2.0 in JAPN 201 or equivalent and ((Reading Level 5 or(ENGL 098 or ENGL 099 or NCSS 101 concurrently))
JRNL151	Newswriting and Reporting	3	Introduction to and practice in writing news stories. Students learn news terminology, style, objectivity, attribution, accuracy, and copy-editing skills. Basic news gathering and reporting tactics are presented and practiced.(F) Prerequisite Courses: Minimum 2.0 in ENGL 121 or ENGL 131 Placement Scores: Reading Level 5 and Writing Level 8 Recommended: Computer and/or keyboarding experience
JRNL251	News Design and Layout	3	This course will equip students to do basic electronic design and layout for newspapers, newsletters, and brochures, among other print media. The news value of information will be the primary criterion for design choices, although fundamental aesthetics also will be covered. (Sp) Prerequisite: Minimum 2.0 in JRNL 151 Recommended: Computer and/or keyboarding experience
JRNL254	Opinion Writing	3	A course in how to write effective editorials. Students analyze content, structure and style of editorial models, learn methods of finding subjects, learn methods of research, and write editorials and articles on important issues. (Sp) Prerequisite: Minimum 2.0 in (JRNL 151 or ENGL 121 or ENGL 131) or (Reading Level 5 and Writing Level 8) Recommended: Computer and/or keyboarding experience
LABR200	Intro to Labor Relations	3	This course surveys both historical and legal frameworks of the labor movement. Major labor laws, causes and goals of the labor movement, and union structure and behavior will be discussed. Students will explore both labor and management approaches to solving employment disputes. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
LABR204	Employment Law for Managers	3	This course provides an introduction and overview to the principles and application of laws affecting the workplace, not including traditional labor relations law. Areas of law covered include discrimination, wage-hour, unemployment benefits, personnel records, and common law issues relating to discharge and other matters. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
LEAD110	Leadership Development I	2	Develop leadership skills through study, observation, and application. Assists students in increasing their understanding of themselves, and the theories and techniques of leadership. Specific skills include: understanding your personal philosophy, visioning, logic and creativity in decision making, servant leadership, ethics, building trust, empowering others, resolving conflict, leader as change-makers, leading with goals, time management, and situational leadership. (F) Prerequisite Courses: None. Department Approval Required Placement Scores: None
LEAD111	Leadership Development II	2	Provides an opportunity to further develop and apply leadership skills introducted in the previous course. Students will learn and apply skills related to conference planning, implementation and evaluation. Students will serve on Lansing Community College committees and volunteer in community organizations. (Sp) Prerequisite: Minimum 2.0 in LEAD 110
LEAD210	Leadership Practicum I	2	This course provides an opportunity to apply leadership skills in on-campus and community service settings. Emphasis is placed on serving on campus committees; as Student Ambassadors involving new student orientation, on and off campus recruitment and other Enrollment Services activities and college functions. Community services is also required. (F) Prerequisite Courses: Minimum 2.0 in LEAD 110 and LEAD 111 Placement Scores: None
LEAD211	Leadership Practicum II	2	This course provides further opportunity for students to apply leadership skills. Emphasis is placed on participation in the Student Recognition Banquet, serving on campus committees; as Student Ambassadors, on and of campus recruitment and other Enrollment Services activities and college functions. Community service is also required.(Sp) Prerequisite: Minimum 2.0 in LEAD 210
LEGL110	Editing Legal Documents	2	This course is an in-depth exposure to common legal documents and vocabulary students will encounter in any law office. Students will learn to read, analyze, proofread and edit legal documents applying sound legal and English fundamentals. Standard reference materials and their importance with respect to legal documents will be emphasized. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
LEGL115	Paralegal Career/Ethics	3	Introduction to the paralegal's role in the legal system, including essential skills used in the litigation process and law practice. Introduces student to legal terminology, legal analysis, procedural, and substantive law. Students will produce a resume and cover letter and prepare for and practice mock employment interviewing skills and practice mock client interviews modeling legal professional ethical standards. Surveys paralegal employment and regulation. 2.0 minimum required to continue program. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
LEGL125	Legal Research and Writing I	4	Students learn research procedures and resources to find federal and Michigan law. Assignments utilize appropriate legal citation form, off-campus law libraries and online legal research tools. Students analyze court opinions and apply them to fact situations to write summaries of court opinions and draft legal documents. Learning methods include reading, discussion, lecture, and writing. (F) Prerequisite Course: Minimum 2.0 in ENGL 121 Placement Scores: (Reading Level 5 and Writing Level 6) or Post-Bachelor student enrolled in 0744 program
LEGL160	Critical Thinking in Law	3	This course strongly emphasizes the "learn by doing" approach, specifically by utilizing group dynamics. The panorama of thinking skills, particularly those relevant in law and criminal justice, will be examined and practiced. Innovative evaluation skills, both personal and group, are a regular part of each session. (F,Sp) Prerequisite Courses: None Placement Scores: None
LEGL210	Litigation Procedures	4	Provides in-depth study of pre-trial, trial, and post-trial practice and procedure. Emphasizes Michigan and federal rules of court. Detailed study of drafting pleadings, discovery procedures, and case preparation for trial and appeal. Also covers evidentiary rules as they relate to trial practice and preparation. (F,Sp) Prerequisite Course: Minimum 2.0 in LEGL 115 or concurrently Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
LEGL211	Tort Law	2	Covers principles of negligence, intentional torts, and strict liability. Emphasizes the role of the paralegal in dealing with these areas of law in actual practice situations. (F,Sp) Prerequisite Course: Minimum 2.0 in LEGL 115 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
LEGL215	Business Law-Basic Principles	3	Introduction to the legal system, its purpose, and the fundamental principles of various areas of the law. Course content includes sources of law, court procedures, contracts, torts, crimes, and constitutional rights. Taught in traditional classroom style or online. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
LEGL216	Commercial Transactions	3	An in-depth analysis of the Uniform Commercial Code allows students to explore the law of sales, commercial paper, secured transactions, banking, insurance, and debtor-creditor rights. Taught in traditional classroom style or online. (F,Sp) Prerequisite Course: Minimum 2.0 in LEGL 215 Placement Scores: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
LEGL217	Business Organizations	3	Introduces basic business organizations, including agency law, partnerships, sole proprietorships, and corporations. Additionally, the course will delve into government regulation of business, real estate, wills, trusts, and estates. Taught in traditional classroom style or online. (F,Sp) Prerequisite Course: Minimum 2.0 in LEGL 215 Placement Scores: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
LEGL218	Litigation Specialties	3	Covers several specialty areas of law, for example personal injury, professional malpractice, products liability, workers' compensation, and no-fault auto insurance. Emphasizes role of paralegal in these practice areas, including drafting of legal instruments. (F) Prerequisite Course: Minimum 2.0 in LEGL 115 or concurrently Placement Scores: Reading Level 5 and Writing Level 6
LEGL219	Adv Busn Law for Acct Majors	4	This course is intended for students majoring in accounting who have a goal of becoming a Certified Public Accountant (CPA). This course covers the law of sales; commercial paper; security devices; debtor-creditor relations; bankruptcy; insurance; agency; partnership; corporations; wills, trusts and estates; employment regulation; real property; and accountant's liability. (F,Sp) Prerequisite Course: Minimum 2.0 in LEGL 215 Placement Scores: None Recommended: Accounting background Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
LEGL221	Real Estate Transactions	3	Covers fundamental principles of real estate property law and introduces the student to common types of real estate transactions encountered by a paralegal in a typical real estate practice. Subject matter includes deeds, land contracts, mortgages, title insurance, environmental issues, forfeitures and foreclosures, and landlord-tenant relationships. (As Needed) Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6
LEGL222	Probate Law and Procedure	3	Probate process will be addressed in detail, from commencement of proceedings through closing the estate of a decedent. Other topics will include wills, trusts, and related topics. Emphasis is on the part played by the paralegal in preparation of documents and other probate practice tasks. (As Needed) Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6
LEGL223	Domestic Relations	3	Covers marriage, divorce, separation, annulment, paternity proceedings, custody, support, property division, and other areas of domestic relations law. Emphasis will be on the paralegal's role in dealing with clients and applying appropriate statutes, case law, and court rules as part of a domestic law practice. (As Needed) Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6
LEGL224	Administrative Law	3	The relationship of governmental administrative agencies to private citizens is explored by studying how law is created and enforced by such agencies at the state and federal levels. Paralegal students will focus on topics including rule making procedures, regulations, adjudication, licensing, and informal action. (As Needed) Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
LEGL225	Legal Research and Writing II	3	Reviews principles of legal research, analysis, and writing. Introduces student to computer-assisted legal research (e.g. Lexis or Westlaw). Student will draft legal memoranda and a trial court brief based on extensive research assignments in Michigan publications. (Sp) Prerequisite Course: Minimum 2.0 in LEGL 125 Placement Scores: Reading Level 5 and Writing Level 6
LEGL227	Bankruptcy and Collections	3	Explores federal bankruptcy law and procedure with emphasis on the paralegal's role in collecting information, interviewing clients, and preparing documents. Topics include a comparison of selected chapters within the bankruptcy code, exemptions, preferences, petitions, schedules, and the part played by the bankruptcy trustee. (As Needed) Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6
LEGL228	Computer Appl for the Law Ofc	3	This course focuses on computer technology as it is applied within the law office, including the use of computers to perform paralegal functions in litigation support, legal research using tools including Lexis or Westlaw, communication and case management applications, such as calendar and docket control. (Sp) Prerequisite Courses: Minimum 2.0 in ((CITF 110 or CITA 119) or Post Bachelor Student enrolled in 0744 program) Placement Scores: Reading Level 5 and Writing Level 6
LEGL229	Immigration Law	3	This course covers fundamental principles and practical application of Immigration Law with emphasis on the paralegal's role. Topics will include sources, history, and future of immigration law, visas, citizenship, refugee/asylum, removal and defenses, impact on other areas of law, and working with clients from cultures around the world. (Sp) Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6
LEGL251	Paralegal Independent Study	1 to 3	This course provides a study of specific current or classic legal topics and issues that affect legal assistants/paralegals. Students, with the assistance of the instructor, select a topic, then develop and execute a plan to independently examine the topic by reviewing written materials and/or interviewing people in the field. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: Department approval to enroll in these CRNs can be requested by calling the Paralegal/Legal Assistant Program office at (517) 483-5228.
LEGL270	Paralegal Certification Prep	3	This course provides a review and preparation for testing for the Certified Paralegal exam administered by the National Association of Legal Assistants. Students will be evaluated on interviewing skills, modeling ethical behavior, legal terminology, substantive and procedural law, research, judgement, and analysis. (Sp) Prerequisite Courses: Minimum 2.0 in (LEGL 210) and [(LEGL 216 and LEGL 217 and LEGL 225 and LEGL 228) or concurrently] Placement Scores: Reading Level 5 and Writing Level 6 and Department Approval Course Note: Department approval to enroll in this class can be requested by calling the Paralegal/Legal Assistant Program office at 517-483-5228.
LEGL280	Paralegal Internship	3	Students will experience the paralegal career by working in a supervised capacity. Placements include private law firms, governmental law offices, courts, corporations, and other law-related settings. Requirements include at least 160 hours in the workplace, weekly reports, periodic meetings, and performance evaluations by on-site supervisor. (F,Sp,Su) Prerequisite Course: None. Department Approval is required. Placement Scores: None Course Note: Department Approval requires a completed application submitted to the Public Service Careers Office. Students must bring their driver's license with the application. Worksite placements must be discussed and assigned by instructor. Students will be notified by phone upon acceptance into the course of the class meeting time arranged by the instructor.
LEGL295	Special Topics in Paralegal	.25 to 8	This course offers students the opportunity to learn advanced skills in paralegal practice by focusing on specific areas of legal practice. Specific content may vary with each offering. (As Needed) Prerequisite: Determined by Section
LING230	Introduction to Linguistics	3	Examines human language from the perspective of contemporary American linguistics: generative syntax, phonology, and morphology. Special attention to the structure of English. Considers regional and social variation, and implications for teachers of language skills. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MASG110	Massage for Non-Majors	1	This course provides instruction in basic Swedish massage therapy skills for non-majors. Along with a brief introduction to the history and principles of massage therapy, the student will learn to perform a professionally draped, full-body Swedish massage on a partner for health enhancement. (F,Sp,Su) Prerequisite Course: None. Must be 18 years of age. Placement Score: None Course Note: Students are required to bring two sheets and unscented massage lotion to the first class session. Lotion can be purchased prior to the start of the class in HHS 016 (payment with credit card only.) For questions please call Medical Locked Storage at 517-483-9741. If you are pregnant you need program approval one week prior to the start of class. If you are pregnant in your 2nd or 3rd trimester, or receiving treatment for a diagnosed medical condition, you are required to bring a written release from your doctor to the first class session to participate in this course.
MASG131	Therapeutic Massage I	4.5	This course provides information on the theory and practice of therapeutic massage. Swedish massage techniques with variations are developed into a sequence for a full body therapeutic massage for healthy adults. Topics include basic anatomy and physiology of major muscle groups and bones, massage benefits and contraindications, professional ethics, body mechanics, and self-care. (F) Prerequisite Course: None. HS Diploma or Equivalent and Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) The Therapeutic Massage Program is offered in two distinct sessions that cannot be combined: a Daytime Cohort beginning in the fall and an Evening Cohort beginning in the spring. Students enrolling in the Daytime Cohort will complete the program in three consecutive semesters, Fall 2019 through Summer 2020. Students enrolling in the Evening Cohort will complete the program in four consecutive semesters, Spring 2020 through Spring 2021. To enroll, students must be 18 years of age or older by the start of classes and must declare Massage as their major. Students wishing to enroll in the Fall 2019 Daytime Cohort must submit a program approval form with required supporting documentation by August 16, 2019, to receive Department Approval. Seats are limited and are awarded on a first come, first served basis. The program approval form can be found in the Massage Therapy Advising Guide on the LCC website. Contact Mabel or Crystal at (517) 483-1410 for more information. 2) Approved students are required to attend a one-hour Orientation before they can register for courses. Orientation times are: May 6, 2019, from 12:30-1:30pm; and June 10, 2019, from 7-8pm. For July and August Orientation dates contact Mabel or Crystal at 517-483-1410. 3) Fall 2019 Daytime Cohort students must enroll in PFFT 104 and all six of the following MASG courses: MASG 131, MASG 132A, MASG 137, MASG 139A, MASG 151B and MASG 251A. 4) Spring 2019 Evening Cohort students must enroll in PFHW 163 and all five of the following MASG courses: MASG 141, MASG 151A, MASG 151B, MASG 231, and MASG 256.
MASG132	Body Systems for Massage	3	An introductory course in human anatomy and physiology that combines lecture and laboratory experiences to provide a basic understanding of the structure and function of human body systems. It is designed for students enrolled in the Therapeutic Massage Program to prepare for licensing exams and professional practice. (F) Prerequisite Course: None. Program Approval is required Placement Scores: Reading Level 5 and Writing Level 6
MASG132A	Body Systems for Massage I	1.5	An introductory course in human anatomy and physiology that combines lecture and laboratory experiences to provide a basic understanding of the structure and function of the skeletal, muscular, and nervous systems of the human body. It is designed for students enrolled in the Therapeutic Massage Program to prepare for licensing exams and professional practice. (F,Sp) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG132B	Body Systems for Massage II	1.5	An introductory course in human anatomy and physiology that combines lecture and laboratory experiences to provide a basic understanding of the structure and function of the cardiovascular, respiratory, endocrine, digestive, special sensory, lymphatic, immune, urinary, and reproductive systems of the human body. It is designed for students enrolled in the Therapeutic Massage Program to prepare for licensing exams and professional practice. (Sp,Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses and Program Approval required Placement Scores: Reading Level 5 and Writing Level 6
MASG137	Medical Elements of Massage	2	This course will introduce the student to basic medical vocabulary related to the body system. Basic pharmacology will be presented with the classifications and names of common medications, as well as massage considerations for common medications. (F) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MASG139	Medical Conditions in Massage	2	This course will introduce students to the pathology of body systems and will address the positive or negative impact that massage therapy may have on those conditions. Students will learn to apply this knowledge to decision-making skills for client care. (F) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
MASG139A	Medical Conditions Massage I	1	This course will introduce students to the pathology of the skeletal, muscular, and nervous systems and will address the positive or negative impact that massage therapy may have on those conditions. Students will learn to apply this knowledge to decision-making skills for client care.(F,Sp) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG139B	Medical Conditions Massage II	1	This course will introduce students to the pathology of the integumentary, cardiovascular, lymphatic, immune, endocrine, respiratory, digestive, urinary, and reproductive body systems and will address the positive or negative impact that massage therapy may have on those conditions. Students will learn to apply this knowledge to decision-making skills for client care.(Sp,Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG141	Massage Clinic I	1.5	Students will progressively utilize the knowledge, skills, and practical experience attained throughout the Therapeutic Massage Program in a clinical setting and in event massage. The student will be engaged in weekly scheduled massage sessions with clients in this first of three clinical courses. (Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG150	Therapeutic Masg Special Topic	.25 to 4	This course offers students the opportunity to learn new skills and knowledge related to therapeutic massage. Specific up-to-date course content will vary with each offering and will be related to therapeutic massage. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
MASG151	Applied Massage Techniques	4	This course will introduce the student to various massage therapy techniques and how these techniques relate to individuals with specific needs. The focus will be on designing and implementing appropriate massage therapy techniques for chair massage, infants, pregnant women, athletes, chronic and terminally ill individuals, the elderly, and clients with psychological issues. () Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG151A	Research Literacy	1	Student will learn to perform a 15 minute seated massage. Students will engage in active learning about types of research used in massage therapy and the value of research to the profession. Students will identify websites with published research literature to determine treatment outcomes for clients. (Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG151B	Event Massage	1	This course prepares the student to perform massage prior to and following an athletic event or training session. Thermal injuries, the use of ice and heat to supplement the healing effects of massage, cross fiber friction techniques, indications, contraindications and procedures are covered. (F,Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG151C	Maternal/Infant Massage	1	This course teaches massage techniques specifically beneficial to women during pregnancy and post-partum recovery. Massage techniques beneficial to infants and young children will also be introduced. (Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG151D	Special Populations	1	The focus of this course will be on learning information needed for designing and implementing appropriate massage therapy sessions for the chronic and terminally ill, the elderly, and clients with psychological and emotional issues. Students learn to adapt massage techniques to the needs of geriatric populations. (Sp,Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MASG170	Massage Directed/Indep Study	.25 to 4	This course includes special research, projects, or directed study in therapeutic massage. Massage students may enroll to update or enhance knowledge, skills, and competencies. Advanced students may explore topics related to, but not included in the curriculum. A learning contract specifying objectives, activities, outcomes, and grading methods is required. (As Needed) Prerequisite Course: None Placement Scores: Determined by Section
MASG231	Therapeutic Massage II	4.5	This course will introduce the student to clinical massage techniques to treat conditions of the upper body. Students will learn anatomy, physiology, and kinesiology of specific muscles of the head, neck, upper extremities, and torso followed by clinical massage techniques and stretches to treat these areas. (Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG232	Therapeutic Massage III	4.5	This course will introduce the student to clinical massage techniques to treat conditions of the lower body. Students will learn anatomy, physiology and kinesiology of specific muscles of the torso, hips and lower extremities followed by clinical massage techniques and stretches to treat these areas. (F,Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Reading Level 5 and Writing Level 6
MASG235	Licensing Exam Prep	1	This course is designed to prepare massage therapy students or practicing massage therapists to study for national massage therapy exams. It will review all areas of the licensing exams content and cover test taking strategies. (F,Su) Prerequisite Courses: Minimum 2.5 in all previous semester MASG courses. Program Approval is required. Valid CPR certification through the end of class from American Heart Association/Health Care Provider or American Red Cross/Professional Rescuer or Passing grade in NCHE 102 or NCHE 103 within 2 years. Placement Scores: Reading Level 5 and Writing Level 6
MASG241	Massage Clinic II	1.5	Students will progressively utilize the knowledge, skills, and practical experience attained throughout the Therapeutic Massage Program in a clinical setting and in an event massage. The student will be engaged in weekly scheduled massage sessions with clients in this second of three clinical courses. (F,Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Reading Level 5 and Writing Level 6
MASG242	Massage Clinic III	1.5	Students will progressively utilize the knowledge, skills, and practical experience attained throughout the Therapeutic Massage Program in a clinical setting and in event massage. The student will be engaged in weekly scheduled massage sessions with clients in this last of three clinical courses. (F,Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG251	Alternative Massage Techniques	4	Students will be introduced to bodywork modalities that include reflexology, polarity, Shiatsu, and positional release through lecture, demonstration, and practice time. Topics will include how to locate specialized training programs in each modality and how to incorporate these techniques into a massage session. () Prerequisite: Minimum 2.5 in all previous MASG courses. Program Approval is required. Reading Level 5 and Writing Level 6
MASG251A	Polarity Therapy	1	Polarity therapy balances the human energy field. Students will learn polarity energetic theory and a basic flow of hands-on polarity energy balancing techniques. Topics will also include how to locate specialized training programs and how to blend polarity techniques into a massage session. (F) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6
MASG251B	Reflexology	1	Reflexology is the science that teaches the principle that there are reflexes in the feet and hands that correspond to every organ, gland, and part of the body. This course teaches the student to access reflex points in the foot to allow an improvement in circulation, nerve and blood supply. (Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required Placement Scores: Reading Level 5 and Writing Level 6
MASG251C	Asian Body Therapy	1	Students will learn a full body Asian body therapy treatment by applying pressure along the meridians to facilitate the natural recuperative powers of the body, disperse toxins, relax muscles and balance energy. (Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MASG251D	Positional Release	1	Positional Release is a therapeutic massage technique for decreasing or eliminating muscle hypertonicity and its resultant neuromuscular discomfort. This technique is painless for the client and allows the massage therapist to use deeper pressure techniques in the previously hypersensitive muscle. (F,Su) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required Placement Scores: Reading Level 5 and Writing Level 6
MASG254	Busn App Therapeutic Massage	2	This course introduces students to aspects of business and marketing in the field of massage and body work. Emphasis is placed on development of a professional and personal business sense using planning and persistence, client-practitioner relationships, research, marketing strategy, goal-setting, motivation, and professional legalities. (F,Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
MASG256	Clinical Assess Therap Massage	1	This course introduces the student to a system of dealing effectively with the client who presents a physical complaint. The principles and methods practiced by effective clinicians are identified and explained so that the student can use the problem oriented approach to analyze neuromuscular problems and complaints. (Sp) Prerequisite Courses: Minimum 2.5 in all previous MASG courses. Program Approval is required. This course is restricted to Massage Therapy Majors. Placement Scores: Reading Level 5 and Writing Level 6
MATH097	Math 119 or Stat 170 Support	2	This course provides support for students enrolled in Math 119 or Stat 170. Topics include numeracy, mathematical thinking & investigations, proportional reasoning, algebraic modeling, basic geometry and statistical concepts. Graphing calculator and real-life applications are integrated through the course. (F,Sp,Su) Prerequisite Course: None Placement Scores: [Reading Level 5 and Writing Level 4 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)] and (SAT Math 440-510 or ACT Math 17-19 or CPT Algebra 50-76 or QRAS 245-259) Co-requisite: Math 119 or Stat 170
MATH105	Mathematical Literacy	4	Provides the skills needed for selected Core Math courses. Topics include numeracy, mathematical thinking & investigations, proportional reasoning, basic algebraic concepts, functions (linear & exponential), and basic statistical concepts. Graphing calculator required. Graphing calculator, spreadsheets and internet resources, as well as real-life applications are integrated throughout the course. (F, SP) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 2 and (Math Level 4 or Minimum 2.0 in MATH 050 or CPT Arithmetic score minimum 58 or ACT Math 15-17 or SAT Math 400-470 or Accuplacer NG Arithmetic score minimum 235) Course Notes: 1) MATH 105 prepares students for MATH 109, MATH 117, MATH 118, MATH 119, STAT 170; MATH 105 is not a prerequisite for MATH 112. 2) Information about course materials will be available to students the first day of class or earlier from your instructor. A graphing calculator from the TI-83/84 family is required for course work.
MATH106	Math Literacy with Review	6	Provides the skills needed for selected Core Math courses. Topics include numeracy, mathematical thinking & investigations, proportional reasoning, basic algebraic concepts, functions (linear & exponential), and basic statistical concepts. Graphing calculator, spreadsheets and internet resources, as well as real-life applications are integrated throughout the course. Includes review of basic math skills as needed. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 2 and (Math Level 3 or CPT Arithmetic score minimum 20 or Accuplacer NG Arithmetic score 200-244) Course Notes: 1) MATH 106 prepares students for MATH 109, MATH 117, MATH 118, MATH 119, and STAT 170; MATH 106 is not a prerequisite for MATH 112. 2) Information about course materials will be available to students the first day of class or earlier from your instructor. A graphing calculator from the TI-83/84 family is required for course work.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MATH109	Fast Track Algebra	4	Topics include properties of real numbers and exponents, variable expressions, solving linear equations and inequalities, polynomial operations, graphing, solving systems of equations and inequalities, functions & and relations, polynomial, rational, radical, and quadratic expressions and equations, rational exponents, and absolute value equations and inequalities with an introduction to complex numbers.(F, Sp, Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and [CPT Algebra 50 or ACT Math minimum 18-19 or SAT Math 480-510 or Accuplacer QRAS score minimum 250 or Minimum 3.5 in MATH 050 or Minimum 2.0 in (MATH 105 or MATH 106) within 2 years or Department Approval] Course Notes: 1) MATH 109 is a fast-track that combines a review of basic algebra along with the content of Intermediate Algebra designed for students who need MATH 120 or MATH 121. A minimum 2.0 in MATH 109 is equivalent to a minimum 2.0 in MATH 112. 2) MATH 109 is offered in 2 different delivery methods: Lecture and online. 3) The course fee provides all enrolled students online access to a full electronic textbook (e-text), online course homework system, and additional online resources. These course materials will be available to students the first day of class. Students are encouraged to speak with their instructor BEFORE purchasing any optional course materials. A graphing calculator from the TI-83/84 family is required for course work. 4) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MATH112	Intermediate Algebra	4	Graphing calculator required. This is an extension of beginning algebra with emphasis on graphing and diverse, real-life applications. Also emphasized are functions & relations, polynomial, rational, radical, and quadratic expressions and equations, rational exponents, and absolute value equations and inequalities with an introduction to complex numbers.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and (Math Level 5 within 2 years or Minimum 2.0 in MATH 107 within 2 years) Course Notes: 1) The course fee provides all enrolled students online access to a full electronic textbook (e-text), online course homework system, and additional online resources. These course materials will be available to students the first day of class. Students are encouraged to speak with their instructor BEFORE purchasing any optional course materials. A graphing calculator from the TI-83/84 family is required for course work. 3) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit https://internal.lcc.edu/assessment/off_campus/.
MATH114	Technical Math I	4	Introductory applied algebra for students in technical programs, with brief introduction to trigonometry. Algebraic expressions, powers, roots, ratio and proportion, variation, linear and quadratic equations, evaluating and solving formulas, systems of equations, graphing, area, volume, Pythagorean Theorem, brief introduction to right triangle trigonometry. Emphasizes problem-solving for technical applications. Graphing calculator required; home internet access is highly recommended.(F,Sp) Prerequisite Courses: Minimum 2.0 in (MATH 050 or MATH 105 or MATH 106) or Math Level indicated below Placement Scores: Reading Level 4 and Math Level 4 Course Notes: 1) Technical career programs allow students with Math Level 5 and Reading Level 5 to enroll directly in MATH 115, even if MATH 114 is listed in the Requirements. 2) A graphing calculator from the TI 83/84 family is required for course work.
MATH115	Technical Math II	4	Applied geometry and trigonometry for students in technical programs. Congruence, similarity, polygons, circle geometry, trigonometry with right and oblique triangles (including laws of sines, cosines and cotangents), surface area, volume, coordinate systems, and introduction to vectors. Emphasizes problem-solving for technical applications. (F,Sp) Prerequisite Courses: Minimum 2.0 in MATH 114 within 2 years or Math Level 5 within 2 years Placement Scores: Reading Level 5 Recommended: The TI-83-84 series calculator is recommended and the TI-84 PLUS CE is highly recommended
MATH117	Math for Business	4	This course surveys math applications in business. Applications representing management, marketing, finance, accounting, and statistics are used. Analysis of situations in business and correct use of business theory is emphasized in addition to accuracy in math. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 4 and [Math Level 5 within 2 years or Minimum 2.0 in (MATH 105 or MATH 106 or MATH 107) within 2 years] Recommended: The TI-83-84 series calculator is recommended and the TI-84 PLUS CE is highly recommended

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MATH118	The Art of Geometry	3	This course emphasizes visualization and appreciation of the beauty of mathematics through geometry; translates between visual and symbolic representations of objects used in visual arts; applies mappings, symmetry, similarity, tilings, vectors, and geometric constructions of shapes to working with 2D and 3D figures; uses geometry software, hands-on techniques and models.(F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4 and [Math Level 5 within 2 years or Minimum 2.0 in (MATH 105 or MATH 106 or MATH 107) within 2 years] Recommended: Graphing calculator required, TI 83/84 series calculators highly recommended.
MATH119	Math - Applications for Living	4	Cover topics in measurement, geometry, statistics, and algebra with a focus on applications and preparation for basic science courses. Includes: Dimensional analysis, growth & decay, finance formulas, statistical reasoning, basic probability, linear and exponential models, and coordinate system graphing of models. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (MATH 105 or MATH 106 or MATH 107) or (MATH 097 concurrently) or Math Level indicated below. Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MATH120	College Algebra	4	This course is for students who do not intend to take MATH 122 or MATH 151, but may want to continue to MATH 141 or STAT 215. Properties and graphs of linear, quadratic, polynomial, rational, exponential and logarithmic functions, with an emphasis on applications including finance, business/industry, life and social sciences. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 109 or MATH 112) within 2 years or Math Level 6 as noted below Placement Scores: Reading Level 5 and Writing Level 4 and (Math Level 6 within 2 years) Recommended: Graphing calculator required, TI 83/84 series calculators highly recommended Course Note: 1) If you need MATH 122 or MATH 151, take MATH 121 instead of MATH 120. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MATH121	Precalculus I	4	This course provides part of the foundation in precalculus essential for subsequent mathematics courses. Preparing students for calculus is emphasized. Topics include polynomial, rational, radical, exponential, and logarithmic functions; solving equations/inequalities algebraically and graphically; and mathematical modeling in problem solving. (F,Sp,Su) Prerequisite Course: Minimum 2.5 in (MATH 109 or MATH 112) within 2 years or Math placement noted below Placement Scores: Reading Level 5 and Writing Level 4 and [(SAT Math 550 or ACT Math 22 or CPT College Level Math 55 or Accuplacer AAF minimum 245) within 2 years] Recommended: Graphing calculator required, TI 83/84 series calculators highly recommended Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MATH122	Precalculus II	4	Second in two-course sequence, following MATH 121. Topics include right triangle trigonometry, trigonometric functions, graphs, identities and equations, inverse trig functions, laws of sines/cosines, polar coordinates, vectors, systems of linear equations, matrices, sequences, series, conic sections, parametric equations, permutations, combinations, and binomial theorem. Degree credit may not be earned in both MATH 121/122 and MATH 126. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in MATH 121 within 2 years or Math Level 7 noted below Placement Scores: Reading Level 5 and Writing Level 4 and (Math Level 7 within 2 years) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MATH126	Accelerated Pre-Calculus	5	MATH 126 is a 5 credit course on functions and trigonometry. Topics include definition and concept of functions, properties and graphs of polynomial, rational, exponential, logarithmic, trigonometric, and inverse trigonometric functions; polar coordinates; conic sections; parametric equations; systems of equations; and the Binomial Theorem.(F,Sp) Prerequisite Courses: None Placement Scores: Math Level 7 within 2 years and Reading Level 5 and Writing Level 6 or Department Approval Course Note: This is an accelerated course that prepares students for the calculus sequence. It is appropriate for students who already have some knowledge of the topics of the course.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MATH141	Calculus with Applications	4	This course provides an introduction to calculus with an emphasis on applications in business, economic, social/life sciences and other fields not requiring an extensive study of calculus. Topics include functions, derivatives, related rates, growth and decay, differential equations, elasticity of demand, the definite integral and applications. (Mathematics, Physical Science, Computer Science, and Engineering majors should take MATH151.) (F,Sp,Su) Prerequisite Course: Minimum 2.5 in (MATH 120 or MATH 130) or Minimum 2.0 in MATH 121 within 2 years or Math Level 7 noted below Placement Scores: Reading Level 5 and Writing Level 6 and (Math Level 7 within 2 years)
MATH151	Calculus I	4	The first course in a three semester calculus sequence. Topics include limits, continuity, and derivatives of algebraic, trigonometric, exponential and logarithmic functions; linear approximation; L'Hopital's rule; Riemann sums; integration using substitution; and the fundamental theorem of calculus. Applications of calculus to problems in engineering and the natural and social sciences. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 122 or MATH 126) within 2 years or Math Level 9 noted below Placement Scores: Reading Level 5 and Writing Level 6 and (Math Level 9 within 2 years)
MATH152	Calculus II	4	The second course in a three-semester calculus sequence. Topics include techniques and applications of integration, improper integrals, sequences and infinite series, power series representation of functions, vectors lines, planes, and 3D rectangular system. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 151 or MATH 161) within 2 years Placement Scores: Reading Level 5 and Writing Level 6
MATH201	Math for Elementary Teachers I	4	The first course in a two-course sequence for prospective elementary teachers. Topics include real number systems and their properties, sets, logic, and number theory. Emphasis is on active engagement in mathematical investigation to develop problem-solving skills and conceptual knowledge essential for teaching elementary school mathematics. (F,Sp) Prerequisite Courses: Minimum 2.0 in (MATH 109 within 2 years or MATH 112 within 2 years) or Math Level indicated below Placement Scores: Reading Level 5 and (Writing Level 6 within 2 years) Recommended: Graphing calculator required, TI 83/84 series calculators Highly Recommended
MATH202	Math for Elementary Teacher II	4	The second course in a two-course sequence for prospective elementary teachers. Topics include data exploration, probability, descriptive statistics and geometry concepts and measurement. Emphasis is on active engagement in mathematical investigations to develop problem-solving skills and conceptual knowledge essential for teaching elementary school mathematics. (F,Sp) Prerequisite: Minimum 2.0 in MATH 201 within 2 years and Reading Level 5 and Writing Level 6 Recommended: Graphing calculator required, TI 83/84 series calculators highly recommended
MATH253	Calculus III	4	The last course in a three-semester calculus sequence. Multivariable calculus and vector analysis are studied. Topics include vector algebra, curves and surfaces in 3D-space, vector valued functions, partial derivatives, multiple integrals, vector fields, line integrals, and surface integrals. Applications of all these topics are presented. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 152 or MATH 162) within 2 years Placement Scores: Reading Level 5 and Writing Level 6
MATH254	Intro to Differential Equation	4	An introduction to the basic methods for solving ordinary differential equations. Topics include the methods for solving first order equations (separable, exact, linear, Bernoulli), undetermined coefficients, variation of parameters, series, Laplace transforms, systems of DEs and numerical methods (modeled using software), Fourier series and separable PDE. Applications are emphasized. Simulation software will be used to model differential equations and separable PDE.(F,Sp) Prerequisite Courses: Minimum 2.0 in MATH 253 within 2 years Placement Scores: Reading Level 5 and Writing Level 6 Recommended: TI 89 recommended
MATH260	Linear Algebra	4	This introduction to linear algebra includes the study of systems of linear equations, vector equations, linear independence, determinants, matrix algebra, vector spaces and subspaces, dimension of a vector space, rank, linear transformations, eigenvalues and eigenvectors, diagonalization, inner products, orthogonal sets, and the Gram-Schmidt process, with applications.(Sp) Prerequisite: Minimum 2.0 in MATH 152 within 2 years and Reading Level 5 and Writing Level 6
MATH281	Honors Math Seminar	1	Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp) Prerequisite: (Minimum 2.0 in MATH 151 or MATH 161 within 2 years) and Department Approval
MATH295	Ind Study in Mathematics	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MEDA116	Intro:MA Clinical & Adm Skills	6	The student will be introduced to the basics of being a medical assistant in the ambulatory care setting. Topics such as medical terminology, anatomy and physiology, basic administrative procedures, human relations, medical asepsis, vital signs, and nutrition will be covered. (F) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4 Co-requisite Courses: MEDA 126 and MEDA 135
MEDA126	MA Administrative Skills	5	In this course the student will learn about: the EHR (electronic health record), how to apply effective and professional communication and interpersonal skills, demonstrate cultural awareness, maintain inventory, perform billing and collections, process insurance, schedule patients, adapt care to different life stages, and help the patient navigate the healthcare system. (F) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4 Co-requisite Courses: MEDA 116 and MEDA 135
MEDA135	MA Pharmacology & Med Math	2	In this class the student medical assistant will learn about the different classifications of drugs and the most commonly used medications, how to calculate dosages for proper administration, the parts of a prescription, common abbreviations, and how to use proper drug references. (F) Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 4 Co-requisite Courses: MEDA 116 and MEDA 126
MEDA145	Legal & Ethical Concepts	2	The student medical assistant will learn about documentation guidelines, federal and state guidelines when releasing medical records and information, following established policies when initiating or terminating treatment, scope of practice, Code of Ethics compliance, HIPAA, ADA Amendments Act, and local health laws. (Sp) Prerequisite Courses: Minimum 2.5 in MEDA 116 and MEDA 126 and MEDA 135 Placement Score: None Co-requisite Courses: MEDA 156 and MEDA 166
MEDA156	MA Clinical Procedures I	5	Within a clinical classroom the student medical assistant will assist with general and specialty exams, learn how to administer medications, respond to emergencies, and how to educate patients. Students will also learn to apply medical terminology to the different specialties, and learn about diagnostic and treatment modalities for each body system. (Sp) Prerequisite Courses: Minimum 2.5 in MEDA 116 and MEDA 126 and MEDA 135 Placement Score: None Co-requisite Courses: MEDA 145 and MEDA 166 and NCHE 102
MEDA166	MA Clinical Procedures II	5	Within a clinical classroom the student medical assistant will learn how medical terminology applies to the body systems, and how each body system is affected by disease, along with diagnostic tests and treatments for each. The student will learn how to obtain laboratory specimens and to perform point of care testing.(Sp) Prerequisite Courses: Minimum 2.5 in MEDA 116 and MEDA 126 and MEDA 135 Placement Score: None Co-requisite Courses: MEDA 145 and MEDA 156
MEDA175	MA Certification Review	3	In this capstone course, the medical assistant student will learn about employment skills, resume writing, interview techniques, professional dress, time management, demonstrating professional behavior, and continuing education. The student will also prepare for the RMA exam by having review and doing practice tests.(Su) Prerequisite Courses: Minimum 2.5 in MEDA 145 and MEDA 156 and MEDA 166 Placement Score: None Co-requisite Course: MEDA 177
MEDA177	MA Practice Immersion	3	The practicum experience includes placement at an ambulatory care facility that performs a balance of administrative and clinical activities to expose students to the necessary skills required of the profession. It has a minimum of 160 clock hours. Students will work under the direct supervision of a preceptor.(Su) Prerequisite Courses: Minimum 2.5 in MEDA 145 and MEDA 156 and MEDA 166. Program Approval is required. Placement Score: None Co-requisite Course: MEDA 175
METD100	Basic Mechanical Drafting	3	This course teaches the fundamental concepts of drafting and design using sketches and manual drafting skills. The student will learn the basics of orthographic projection, lettering, sketching, dimensioning techniques, and much more. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
METD105	PC Applications for Technology	3	This course provides an introduction to PCs as used in a technical-industrial setting. Basic computer hardware knowledge and simple file management practices are taught. Students will use Windows, the Internet, word processing, spreadsheet, presentation, and database software. Students will also be introduced to CAD software. (F, Sp) Prerequisite Courses: None Placement Scores: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website.
METD110	Mechanical CAD Drafting I	4	This is an introductory course in mechanical drafting and computer aided drafting using CAD software . Instruction includes orthographic projection, auxiliary views, secondary auxiliary view projections, sections, dimensioning techniques, and printing. Students will complete a series of drawings on the computer to demonstrate understanding of the concepts presented. (F,Sp) Prerequisite Course: Minimum 2.0 in METD 100 or Mechanical Drafting Placement Test 80% Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
METD111	Mechanical CAD Drafting II	4	This course covers advanced drafting and design techniques needed to project successive auxiliary views from various orthographic views. Layout and design concepts will also be stressed. Students will use computers with CAD software to complete practical design projects in problem solving and creativity applicable to the automotive, industrial, and/or aerospace industries. (Sp) Prerequisite Course: Minimum 2.0 in METD 110 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METD130	Geometric Dimension/Tolerance	4	This course covers the principles and methods of dimensioning and tolerancing for specific design requirements on engineering drawings. Uniform practices for stating and interpreting these requirements will be stressed. Content includes use and understanding of the symbolic method of specification relating to tolerances being applied using ASME/ANSI M14.5Y 1994 standards. (Sp) Prerequisite Course: Minimum 2.0 in METD 100 or Mechanical Drafting Placement Test 80% Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
METD150	Industrial Blueprint Reading	3	This course covers basic concepts in orthographic projection, with emphasis on interpretation of engineering drawings. Areas also covered include measurement systems, technical sketching, dimensioning, sectional and auxiliary views, and tolerancing. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None Recommended: METD 100
METD170	Special Topics/Eng & Design	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Computer Aided Drafting and Design and other related topics. Specific content may vary with each offering and will be related to the Computer Aided Drafting and Design Program and profession. (F,Sp,Su) Prerequisite: Determined by Section
METD220	Basic Unigraphics/NX	4	This is the first of a two-semester course sequence that covers the fundamentals of the Unigraphics System of interactive design. This course covers comprehensive CAD concepts of 2-D and 3-D construction and basic solid modeling, as well as some of the concepts of drafting. Prior CAD system experience is required. (Sp) Prerequisite Course: Minimum 2.0 in METD 110 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METD221	Advanced Unigraphics/NX	4	This is the second of a two-semester course sequence that covers the design and construction of sophisticated solid models of complex assemblies and components, and the production of dimensioned and toleranced engineering drawings of those components. Advanced concepts of Unigraphics modeling will be discussed and utilized in class projects. (F) Prerequisite Course: Minimum 2.0 in METD 220 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 5
METD250	Detailing Assembly Drawings	4	This course builds on previous courses giving students an advanced understanding of assemblies and the details pulled from CAD assemblies. Students will also be able to identify how machine processes and various types of dies and components are used to create parts and assemblies. (F) Prerequisite Course: Minimum 2.0 in METD 130 Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METD265	Basic CAD FEA Simulation	4	NX finite element analysis method is used in conjunction with the application of mesh to analyze part design performance due to the impact. Performance behavior is executed on the product based overall strength, resistance to buckling, and thermal response to external force. (Sp) Prerequisite Courses: Minimum 2.0 in (METD 221 or METD 250) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METD295	Engineering/Design Project Lab	1 to 4	This course is intended to give advanced drafting and design students an opportunity, through mutual agreement between student and instructor, to complete project(s) on one of several available CAD systems. (F,Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
METM100	Manufacturing Processes	3	This course provides students with a comprehensive study of the materials, concepts, and processes used in modern manufacturing which is augmented by field trips to local manufacturing plants. This course is designed for those who are pursuing careers in manufacturing design, engineering, and supervision. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 4 Recommended: MATH 105 or MATH 106 or Math Level 4
METM108	Machine Tool Operations	4	This course will inform students of the machine tool principles used in industry. Safety, measurement, and procedures will be used to complete projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations, and hands-on projects. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
METM112	Introduction to CNC Machining	4	Introduces computerized numerical control equipment with hands-on programming, set up, and operation of the CNC Lathe and Mill. (F, Sp) Prerequisite Course: Minimum 2.0 in METM 108 Placement Scores: Reading Level 3 and Writing Level 4 and Math Level 4
METM150	Advanced CNC Machining	4	In this course, students will set up and operate CNC lathes, CNC mills, and grinding equipment, write CNC programs, identify and select tooling, and perform precision measurements. Topics covered include safety and preventive maintenance, the eight basic functions of a CNC machine control, and high speed machining processes. (F) Prerequisite Courses: Minimum 2.0 in (METM 110 or METM 112) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METM170	Special Topics/Precision Mach	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Precision Machining and Maintenance and other related topics. Specific content may vary with each offering but will be related to the Precision Manufacturing Technology Program and profession. (F,Sp,Su) Prerequisite: Determined by Section
METM171	Special Topics/Machining P/Z	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Precision Machining and Maintenance and other related topics. Specific content may vary with each offering but will be related to the Precision Manufacturing Technology Program and profession. This course will be offered on a Pass/Fail basis. (F,Sp,Su) Prerequisite: Determined by Section
METM190	Metallurgy and Heat Treatment	4	This course introduces the science of metallurgy, a domain of materials science that studies the physical and chemical behavior of metallic elements. Students acquire a working knowledge of the properties, uses and heat treat processes of commonly used metals and alloys. Topics are explored through lecture and laboratory analysis. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Recommended: High School Chemistry or CHEM 125
METM195	Quality/Metrology/Inspection	2	This pre-engineering course introduces the science of precision measurement, focusing on accuracy and application as well as problem solving as it relates to dimensional metrology. Topics include measurement processes and feasibility, industry standards, and operation of the Coordinate Measuring Machine. Quality systems, calibration systems, and Statistical Process Control are also explored. (F,Sp) Prerequisite Courses: Minimum 2.0 in [METD 130 and (METM 108 or METM 110)] Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METM220	Basic Mastercam	4	Mastercam is a powerful graphics based programming software for CNC machine tools. Mastercam software is designed to generate CNC programs from mechanical CAD drawings. Students will use Mastercam to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment. (F,Sp) Prerequisite Courses: Minimum 2.0 in (METM 108 or METM 110) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METM221	Advanced Mastercam	4	The student will learn the advanced CNC programming functions of the MasterCAM software. The successful student will be able to design, program, and run 3-dimensional CNC programs and check the toolpath using the MasterCAM verify toolpath function. (F) Prerequisite Course: Minimum 2.0 in METM 220 Placement Scores: Reading Level 3 and Writing Level 4 and Math Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
METM240	Basic NX Machining	4	Basic NX Machining will use or modify existing models or boundaries to stage parts or wave-linked geometry for fixed axis or multi axis mill turning operations. Specific NX machining strategies will be purposed and output for target machine tool types for application of post processing. (Sp) Prerequisite Courses: Minimum 2.0 in (METD 220 and METM 108) Placement Scores: Reading Level 4 and Writing Level 4 and Math Level 4
METM295	Precision Machine Project Lab	1 to 4	An advanced course for students wishing to do in-depth work in the machine shop area or to develop trade-entry skills. Students select projects compatible with their individual fields of work. (Approval may be given to take this course twice for a maximum of eight credits.) (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
METS102	Industrial/Construction Safety	2	This course covers safety in the industrial workplace and on construction worksites. Included are local, state and federal safety regulations. The focus will be on the prevention of accidents but will teach the correct response if an accident should occur. First aid, CPR/AED certificates will be issued upon successful completion. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Course Notes: 1) This course requires students to be certified in CPR and First Aid as part of the course grade. Training will occur as part of traditional on-campus sections. Online students have the option of attending CPR and First Aid sessions at LCC's West Campus. Students who cannot travel to LCC will need to make other arrangements to become certified. Additional costs may be incurred if the scheduled CPR and First Aid sessions are not used. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website. 3) Online students CANNOT qualify for the OSHA-10 certification due to OSHA limitations. Students requiring OSHA-10 Certification should enroll in one of the lab/lecture sections. $11 of the Course Fee is non-refundable.
METS110	Mechanical Power Transmissions	4	This course will teach theory and industrial application of power transmission gear drive systems, chain drive systems, belt drive systems, couplings, clutch and brake and more. (Sp) Prerequisite Courses: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)
METS115	Intro to Mechanical Systems	4	This course introduces the student to the theory and selection criteria for mechanical power systems. Topics discussed include pneumatics, hydraulics, and mechanical drives. Lectures include fundamentals and real life applications in designing basic systems. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
METS120	Industrial Pneumatics	4	An introduction to the concepts, principles, and components of industrial pneumatic systems, this course covers gas laws, theory of air compression, regulators, filters, valves, actuators, electro-pneumatic and pneumatic circuits with emphasis on pneumatic diagrams and circuit design. Lectures, labs and troubleshooting give students a hands-on approach in the field of pneumatics. (F) Prerequisite Courses: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
METS125	Intro to Hydraulics/Pneumatics	4	This course introduces the student to the theory of basic hydraulic and pneumatic principles as they relate to automated systems. Topics include application of components, causes of malfunctions in the system, and system troubleshooting strategies. (Sp) Prerequisite Courses: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102 or concurrently) Placement Scores: Reading Level 3 and Writing Level 2 and (Math Level 3 or minimum 2.0 in MATH 105 or MATH 106)
METS130	Industrial Hydraulics	4	Industrial hydraulics introduces the theory of fluid power and circuits covering pumps, pressure valves, flow valves, cylinders, filters and motors, etc., as they are used in industry today. This will be done with lectures and labs related to each of the respective components. (Sp) Prerequisite: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102 or concurrently) and Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
METS140	Rigging	3	This course covers uses and strengths of ropes, chains, block and tackles, and the construction and erection of gin poles, with a study of rope knots used in rigging and cranes. Safe working strength of slings, hooks, sheaves, ropes and chains, and the use of personal safety equipment will be covered. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: $20 of the Course Fee is non-refundable.
METS145	Automated Systems	3	This course introduces students to automated system basics, including electrical components, mechanical components, electrical drives, pneumatic and hydraulic control circuits, and programmable logic controllers (PLCs). The student will be able to troubleshoot a complex mechatronics system and correct malfunctions. (Sp) Prerequisite Courses: Minimum 2.0 in [ELTE 109 and (ELTE 130 or ELTE 131 or concurrently) and (METS 125 or concurrently)] Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
METS160	Introduction to Robotics	3	The purpose of this course is to introduce students to industrial robot fundamentals with regards to safety, types, applications, programming, operation, and troubleshooting.(F, Sp) Prerequisite Courses: Minimum 2.0 in (METS 102 or ELTE 102 or DCTM 102 or HVAC 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]
METS170	Special Topics/Mechanical Sys	.25 to 8	This course offers students the opportunity to learn new or advanced skills in Manufacturing and other related topics. Specific content may vary with each offering but will be related to the Manufacturing Program and profession. (F,Sp,Su) Prerequisite: Determined by Section
METS210	Lubrication and Bearings	4	This course covers lubricant applications as applied to industrial equipment including the type, frequency, and amount needed. Participants will troubleshoot centralized lubrication systems, learn to set up an oil management program, remove and install bearings, and identify bearing failures. (F) Prerequisite Courses: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
METS250	Gen. Prevent/Predictive Maint	3	This course will introduce the learner to the various types and styles of predictive and preventive maintenance components used in industrial applications. It focuses on aspects of machine maintenance. Activities include regular and routine cleaning, lubricating, testing, checking for wear and tear, and eventually replacing components to avoid breakdown. (Sp) Prerequisite Courses: Minimum 2.0 in (METS 102 or ELTE 102 or DCTM 102 or HVAC 102 or WELD 102) or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: $100 of the Course Fee is non-refundable.
METS260	Advanced Robotics	3	The purpose of this class is to build on the students' basic robotic knowledge, to include robot vision systems, robot safety zones and interlocks, and advanced programming. This will all culminate with a capstone project that will incorporate electrical, mechanical, fluid power, robotic, and PLC systems. (Su) Prerequisite Courses: Minimum 2.0 in (ELTE 260 and METM 108 and METS 125 and METS 160) Placement Scores: Reading Level 3 and Writing Level 4 and Math Level 4 Course Note: $20 of the Course Fee is non-refundable.
METS290	Manufacturing Internship	2 to 4	This course provides Manufacturing students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required Placement Scores: None Recommended: 2.5 GPA or greater
METS295	Mechanical Systems Project Lab	1 to 4	An advanced course for students wishing to do in-depth work in the mechanical systems/machine maintenance area or to develop trade-entry skills. Students select projects compatible with their individual fields of work. (Approval may be given to take this course twice for a maximum of eight credits.) (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MGMT150	Managing Customer Relations	3	This course is designed to help customer service workers and managers explore the dynamics of customer service and customer relations. The course includes strategies for providing for customers needs, behavioral skills and knowledge for effective customer service, verbal and non-verbal skills for effective customer communication, and techniques for measuring success. Focus is on the dynamics of building successful relationships. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT200	Creative Thinking for Business	3	This course takes an experiential approach to helping students understand and explore elements of the creative process. It is designed to develop skills, eliminate barriers, and allow students to apply thinking skills to business situations. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Have taken at least two or more BUSN or MGMT courses or have business experience Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT201	Time Management for Business	1	Learners will discover basic principles and techniques of time management that can be applied to both personal and professional situations. Students will learn how to manage time using tools and techniques to maximize productivity. (F, S, Su) Prerequisite Course: None. Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT202	Managing Difficult People	1	This course provides practical strategies to overcome negativity and difficult behaviors of people in the workplace. This includes defining types of difficult employees, understanding an intervention model, and addressing difficult behaviors. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT203	Managing Meetings	1	Students will learn how to implement quality measures in order to increase productivity of meetings. Skills learned will include the strategies to improve meeting effectiveness, either as a leader or participant. These are fundamentals of conducting and managing meetings, causes of conflict in meetings, and techniques to build a positive climate. (F,Sp,Su) Prerequisite: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT223	Supervisory Skills	3	This course presents supervisory principles and practices for first-line supervisors. Emphasis is on developing interpersonal and first line supervisory skills. Managerial functions are introduced, along with policies, decision-making, and the responsibilities of supervisors for overall work performance and employee development and evaluation. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT224	Human Resource Management	3	This course examines the role of human resources management and its contribution to the total organizational effort. Emphasis will be placed on the evolution of human resource management, recruitment and selection, improving performance, compensation and incentives, safety and health, employee-management relations, and current legislation. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

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MGMT225	Principles of Mgmt/Leadership	3	Designed to reflect the dynamics of our changing world, this course covers such topics as management/leadership functions/processes, quality, ethics, global issues and the challenges and opportunities of diversity. Emphasis is on theories and skills of management and leadership at the mid-organizational level. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT227	Training/Development for Busn	3	This course is designed to cover all aspects of training in the business environment. Participants focus on assessing training needs, identifying training barriers, curriculum design, instructional techniques, evaluation, and adult learning theory. (Sp) Prerequisite: Minimum 2.0 in MGMT 224 or concurrently and Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT228	Organization Behavior	3	Examines the dynamics of relationships at work. Integrates and applies behavioral and social science knowledge using a systems approach, and focuses on the nature of both people and organizations. Students will study individual and group behavior and will have opportunities to work on skills necessary for successful interaction in organizations. (F,Sp) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Recommended: MGMT 223 or MGMT 224 or MGMT 225 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT229	Compensation Management	3	Students will gain a practical understanding of the principles and applications of compensation management. Students will study the theories, behaviors, and legal constraints affecting compensation practices, including job analysis, job evaluation methodologies, labor market surveys, variable pay approaches, and the administration of legally mandated and voluntary employee benefit programs. (F) Prerequisite Courses: Minimum 2.0 in MGMT 224 Placement Scores: Reading Level 5 and Writing Level 6 Recommended: LABR 204 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT231	Developing and Leading Teams	3	This course defines and examines team building, team leadership, and self-managed teams in the context of today's workplace. Students develop skills in writing team mission and vision statements, team goals, and action assignments. Chartering, problem solving, decision-making, conducting effective meetings, work sessions, negotiating, and presenting are also explored. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information, please visit the Testing Services webpage at https://www.lcc.edu/testing.
MGMT234	Diversity in the Workplace	3	This course explores cultural, gender/sexual, physical, and other minority experiences in the workplace and in the world. The management of human resources will be examined from a domestic and global perspective. Emphasis is on helping the majority group and the minority group become aware of the other's opinions, feelings, and perspectives. Instruction takes an experiential, awareness training approach. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT235	Independent Study/Manage/Lead	1 to 3	Students design and implement special research projects to apply personal and professional experience to an academic area of interest, linking theory with practice. Students meet with coordinator and work independently towards completion of project report. Students should plan a minimum 16 hours per credit and ten pages of report per credit. (F,Sp) Prerequisite Courses: None. Department Approval Required Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MGMT237	Managing/Continual Improvement	3	This course provides an introduction to concepts of quality, continual improvement, systems thinking, and other new management practices. The history of the quality movement including key thinkers/leaders is covered. Methods for continual improvement teams, learning organizations, and new ways of thinking and leading are explored. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 6 and Math Level 4
MGMT239	Time and Stress Management	3	This course explores the relationship between time and stress management: stress is the causal factor for many of our physical and psychological problems. Methods for positively harnessing its energy are suggested, and techniques and strategies for using time and energy wisely are offered. Emphasis is placed on creating action plans and initiating corrective actions. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
MGMT280	Mgmt/Leadership Internship	3	This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, management or leadership related, and provide an appropriate learning situation. (F,Sp) Prerequisite Courses: None. Department Approval Required Placement Scores: None Recommended: Have completed a minimum of 30 Credits
MGMT300	Leading for Possibility	3	Provides an overview of the changing roles of leadership within an organization and lays a foundation for exploration of the emerging roles and functions of leadership in today's changing environments. Theories and skills are applied to a variety of organizational settings. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT304	Organization Development	3	Based on the assumption that all managers and leaders must recognize, plan for, and manage organizational change, this course examines the process of improving organization effectiveness by means of a systematic change program. Students practice identifying problems, selecting appropriate interventions, building action plans, and developing facilitator skills. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT329	Advanced Mgmt Communication	3	This is an advanced course in business communication skills for managers and leaders. It includes components of listening, non-verbal signals, oral presentations, facilitation, interviewing techniques, meeting management, business reports, and electronic/digital communications. This class is both informational and experiential. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT332	Ethics: Assumpt for the Future	3	This course is designed to sensitize participants to the impact of ethics on decision-making. Participants will examine values and assumptions, both personal and organizational, which influence management and leadership style. Exploration of the importance of intention and right relationships in strategy and the creation of the future workplace is also included. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
MGMT335	Managerial Statistics	3	This course covers applications of statistical tools and techniques to improve managerial decision-making processes. It includes basic descriptive statistics and graphing techniques, probability, probability distributions, hypothesis testing, analysis of variance, regression analysis, time series and forecasting models. (F,Sp) Prerequisite Courses: Minimum 2.0 in (MATH 112 or MATH 115 or MATH 117 or MATH 119) or Math Level 6 as noted below. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MGMT337	Advanced Human Resource Mgmt	3	Human resource skills are developed at an advanced level. Workplace relationships between employee, manager, human resource department, and the organization are analyzed in areas of leadership and motivation, legal compliance, performance planning and evaluation, union-management dynamics, and recognition and reward practices. (F,Sp) Prerequisite Courses: Minimum 2.0 in MGMT 224 or Department Approval Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT338	Current Topics in Management	3	Study of specific current topics and issues that affect managerial/leadership decisions. Students explore internal and external constraints on actions. External factors considered include legal, social, educational, and political. Internal factors include shareholders, employees, and customers. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT345	Context and Transformation	3	This course is designed to help people of vision and courage examine the beliefs, principles, and behaviors which drive organizations. In seminar format, participants investigate possibilities for new ways of thinking together, focusing on emerging perspectives of ourselves, our organizations, our communities, and our world. Students explore the growing importance of environment in creating a context for transformation. (Sp) Prerequisite: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MGMT346	Managerial Finance	3	This course is designed to provide necessary and practical skills to deal with financial matters and communicate with people who specialize in finance. Topics covered include basic financial analysis, short-term and long-term financing, financial planning, and managing the finance function.(F) Prerequisite: (Minimum 2.0 in MATH 112 or MATH 115 or MATH 117 or MATH 119 or Math Level 6) and (minimum 2.0 in ACCG 210 and minimum 2.0 in ACCG 211) and Reading Level 5 and Writing Level 6 Recommended: Have taken previous MGMT courses Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MILS110	Introduction to the Army	1	This course addresses duties and responsibilities of the Army officer and noncommissioned officer, and organizational structure of the Army, Army Reserve, and National Guard. Students will also explore the Army's role in joint operations, Army values, leadership, customs and traditions. (F) Prerequisite Courses: None Placement Scores: None Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.
MILS111	Introduction to the Army-Lab	1	The Leadership Laboratory augments the Army ROTC academic curriculum by providing hands-on practice of subjects taught in the Military Science classes. Students receive feedback from department staff regarding their leadership performance within the unit structure. Students seeking a commission with the United States Army are highly encouraged to take the laboratories. Over the continuum of the Military Science courses, cadets practice individual movement techniques and field craft, small unit tactics, operations planning and execution, culminating with operational-level organizational management. Prerequisite Course: None Placement Score: None Department Approval Required.
MILS120	Foundations of Army Leadership	1	Topics include: fundamentals of basic Army leadership, military problem solving process, military briefing and writing skills, and goal setting and time management. Students are also introduced to the Army's developmental counseling program. (Sp) Prerequisite: None Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MILS121	Fndtion of Army Leadership-Lab	1	The Leadership Laboratory augments the Army ROTC academic curriculum by providing hands-on practice of subjects taught in the Military Science classes. Students receive feedback from department staff regarding their leadership performance within the unit structure. Students seeking a commission with the United States Army are highly encouraged to take the laboratories. Over the continuum of the Military Science courses, cadets practice individual movement techniques and field craft, small unit tactics, operations planning and execution, culminating with operational-level organizational management. Prerequisite Course: None Placement Score: None Department Approval Required.
MILS210	Army Doctrine & Team Develpmnt	2	Students will examine military case studies, critical dilemmas in combat situations and the ethical decisions Army leaders make to ensure mission success to develop an understanding of how to improve Army organizations and soldier performance. The Army's leadership development program, battle drills, land navigation, and combat decision making are also addressed. (Sp) Prerequisite Courses: None Placement Scores: None Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.
MILS211	Army Doctrine/Team Develop-Lab	1	The Leadership Laboratory augments the Army ROTC academic curriculum by providing hands-on practice of subjects taught in the Military Science classes. Students receive feedback from department staff regarding their leadership performance within the unit structure. Students seeking a commission with the United States Army are highly encouraged to take the laboratories. Over the continuum of the Military Science courses, cadets practice individual movement techniques and field craft, small unit tactics, operations planning and execution, culminating with operational-level organizational management. Prerequisite Course: None Placement Score: None Department Approval Required.
MILS220	Mil Leadrshp & Decision Making	2	This course uses military case studies to study challenging situations for military leaders and units, and understand how to apply sound ethical leadership practices to implement decisions. Students will also develop an understanding of basic military small unit tactics. (F) Prerequisite: None Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.
MILS221	Mil Ldrshp/Decision Making-Lab	1	The Leadership Laboratory augments the Army ROTC academic curriculum by providing hands-on practice of subjects taught in the Military Science classes. Students receive feedback from department staff regarding their leadership performance within the unit structure. Students seeking a commission with the United States Army are highly encouraged to take the laboratories. Over the continuum of the Military Science courses, cadets practice individual movement techniques and field craft, small unit tactics, operations planning and execution, culminating with operational-level organizational management. Prerequisite Course: None Placement Score: None Department Approval Required.
MKTG100	Current Issues in Business	3	This is an introductory course designed to enhance a student's occupational preparedness and competence by promoting a better understanding of the competitive enterprise system. Classroom instruction will be combined with relevant marketing projects and professional community involvement to give students a solid foundation of marketing knowledge and managerial "know-how." (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
MKTG119	Mktg/Manage Your Profess Image	3	This course is a complete guide for everything people and their companies need to know to do the right thing at the right time in every business situation. Students will understand the importance of a professional image as it relates to business success and will develop a personal image development plan. (F,Sp) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MKTG120	Sales	3	This course presents the fundamentals of selling. Topics include the basics of sales, motivation, and human relations. The course is designed so that students will not only learn about selling, but to be able to do it. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MKTG130	Retailing	3	Students will gain understanding of activities and strategies used in selling goods to ultimate consumers. The course develops an awareness of problems facing retailers and explores feasible solutions. Career opportunities in retailing are examined. (Sp) Prerequisite: Reading Level 5 and Writing Level 4

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MKTG140	Introduction to Advertising	3	Methods and techniques used in modern advertising. Information on the entire advertising function. Preparation of an advertising campaign will be required to facilitate hands-on understanding of the component parts which include marketing review, marketing plan, creative strategy, and media selection. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MKTG200	Principles of Marketing	3	Designed to define marketing, develop an understanding of the marketing concept and functions, and generally investigate the field of marketing. Will cover the marketing environment; identifying consumer needs; examining product, price, promotion; and distribution strategies within our society. Provides a basic marketing understanding with practical applications. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Recommended: BUSN 118 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MKTG202	Managerial Marketing	3	The course focuses on the solution of marketing problems through case analysis. It relates marketing to the total enterprise by analyzing problems, and suggesting approaches to business decision-making. Particular attention is paid to the elements of the marketing mix and how marketing management deals with these variables. (Sp) Prerequisite: Minimum 2.0 in MKTG 200 and Reading Level 5 and Writing Level 6 Recommended: MKTG 204 and Second Year Student
MKTG204	Marketing Research	3	Types of data, sampling, data collection, analysis, interpretation, and applications of marketing research. A practical managerial approach - not a statistical or mathematical orientation. Students will design and execute a marketing research project. (F) Prerequisite Courses: Minimum 2.0 in MKTG 200 Placement Scores: Reading Level 5 and Writing Level 6
MKTG210	Marketing on the Internet	3	This course will explore the impact of information technology on the practice of marketing. Course content focuses on the internet, its culture and procedures from a marketing perspective, and will include using the internet for customer contact and customer service. This class uses extensive hands-on activities. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6 Recommended: MKTG 200 and basic understanding of computers and their use on the Internet Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MKTG221	Consumer Behavior	3	Covers the basic perspectives involved in consumer motivation and decision-making. Students will investigate relevant variables that shape consumer actions and concepts that integrate the study of consumer behavior with the practice of marketing. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4
MKTG229	Public Relations	3	Provides an introduction to principles involved in creating and maintaining good public relations. Techniques for developing improved employer-employee relations, customer relations, and the total public relations effort will be discussed and applied. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MKTG231	Independent Study in Marketing	1 to 3	Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 16 hours of work per credit is required. (F,Sp) Prerequisite: Department Approval
MKTG235	Marketing Internship	3	This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, marketing related, and provide an appropriate learning situation. (F,Sp) Prerequisite Course: None. Department Approval is required. Placement Score: None. Recommended: Have completed a minimum of 30 credits

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MRIT200	Professional Prospectus	1	TThis course serves to orientate the MRI student to the profession of medical imaging. Students will explore the integration of MRI within the encompassing health care system. The evolution of MRI as a profession will be investigated with students classifying various organizations and agencies that drive the development and continuing education of the MRI technologist's role and responsibilities. (Su) Prerequisite Course: None. Certificate students: ARRT Certification in Radiography and Department Approval is required; AAS students: minimum 2.0 in all prerequisite courses and Department Approval is required. Admission to the MiRIS Magnetic Resonance Imaging Program is required for both. Co-requisite Courses: MRIT 229 and MRIT 260
MRIT201	Computer Apps/Medical Imaging	3	This course serves to provide the MRI student with a basic understanding of computer applications. Students will explore the components, principles, and operation of digital imaging systems, image data management, and data manipulation as it relates to the imaging department. Students will also explore the basic concepts of patient information management including medical record concerns, patient privacy, and regulatory issues. (F) Prerequisite Courses: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260 Placement Score: None Co-requisite Courses: MRIT 220 and MRIT 230 and MRIT 261
MRIT220	MR Physics I	3	This is the first in a series of two courses that provide the MRI student with a basic foundation of MRI physics. Students will explore the properties of atoms and their interactions within the magnetic field. Emphasis will be placed on the basic principles of MRI, data acquisition, and tissues characteristics in image formation. (F) Prerequisite Courses: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260 Placement Score: None Co-requisite Courses: MRIT 201 and MRIT 230 and MRIT 261
MRIT222	MR Physics II	3	This is the final physics course in a series of two. The course content is a continuation of Physics I concepts including pulse sequencing, applications, coil selection as it relates to scan selection, calculation of scan times, scan parameters and imaging factors. Emphasis will be placed on the topics of gradient echoes, cardiac imaging, magnetic resonance angiography, diffusion, perfusion, and spectroscopy.(Sp) Prerequisite Courses: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261 Placement Score: None Co-requisite Courses: MRIT 232 and MRIT 240 and MRIT 262
MRIT229	Applied Sectional Anatomy	3	This course is a study of human anatomy as seen in multiple planes. Students will review the gross anatomy of the entire body and identify anatomic structures in the axial, sagittal, coronal, and orthogonal planes. Emphasis will be applied to the appearance characteristics of each structure as seen on illustrations and photographic images correlated with magnetic resonance (MR) and computed tomography (CT).(Su) Prerequisite Courses: Certificate students: None. ARRT Certification in Radiography; AAS students: Minimum 2.0 in all prerequisite courses. Program Approval is required. Admission to the MiRIS Magnetic Resonance Program is required for both. Placement Score: None Co-requisite Courses: MRIT 200 and MRIT 260 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MRIT230	MR Procedures and Pathophys I	3	This is the first in a series of two courses that will provide the student with considerations related to routine imaging techniques of the central nervous system (CNS) and musculoskeletal system (MSK). Students will explore the signal characteristics of normal anatomy and compare it to common pathologies. Emphasis will be placed on tissue characteristics, protocol options, and positioning considerations. (F) Prerequisite Courses: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260 Placement Score: None Co-requisite Courses: MRIT 201 and MRIT 220 and MRIT 261 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MRIT232	MR Procedures and Pathophys II	3	This is the final procedures and pathophysiology course in a series of two that will provide the student with considerations related to routine imaging techniques related to the abdomen and pelvis and special imaging techniques. Students will explore the signal characteristics of normal anatomy and compare it to common pathologies. Emphasis will be placed on tissue characteristics, protocol options, and positioning considerations. (Sp) Prerequisite Courses: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261 Placement Score: None Co-requisite Courses: MRIT 222 and MRIT 240 and MRIT 262 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
MRIT240	MRI Image Analysis	3	This course provides the MRI student with the critical assessment skills necessary to recognize and identify pathology and artifacts. Students will explore the necessary parameter adjustments for differential diagnosis. Emphasis will be placed on quality control procedures, image post-processing, and image archiving. (Sp) Prerequisite Courses: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261 Placement Score: None Co-requisite Courses: MRIT 222 and MRIT 232 and MRIT 262
MRIT260	MRI Pre-Clinical Preparation	3	This course prepares the MRI student for safe participation in clinical education within the MRI environment. Students will explore and discuss the importance of MRI safety and patient assessment. While most of the course is delivered online, students will practice and master various safety procedures in a face-to-face workshop setting. (Su) Prerequisite Courses: Certificate students: ARRT Certification in Radiography and Department Approval is required; AAS students: minimum 2.0 in all prerequisite courses and Department Approval is required. Admission to the MiRIS Magnetic Resonance Program is required for both. Placement Score: None Co-requisite Courses: MRIT 200 and MRIT 229
MRIT261	Clinical Practice I	3	This is the first in a series of three clinical courses that provides the necessary supervised clinical education needed for the MRI student to competently apply basic protocols, recognize when to appropriately alter the standard protocol and recognize equipment and patient considerations that affect image quality. Emphasis will be placed on patient safety and comfort while professional values, attitudes, and behaviors are upheld. (F) Prerequisite Courses: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260 Placement Score: None Co-requisite Courses: MRIT 201 and MRIT 220 and MRIT 230
MRIT262	Clinical Practice II	3	This is the second in a series of three clinical courses that provides the necessary supervised clinical education needed for the MRI student to competently apply basic protocols, recognize when to appropriately alter the standard protocol, and recognize equipment and patient considerations that affect image quality. Emphasis will be placed on patient safety and comfort while professional values, attitudes, and behaviors are upheld.(Sp) Prerequisite Courses: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261 Placement Score: None Co-requisite Courses: MRIT 222 and MRIT 232 and MRIT 240
MRIT263	Clinical Practice III	3	This is the final clinical course in a series of three that provides the necessary supervised clinical education needed to complete all remaining competencies required by the American Registry of Radiologic Technologists (ARRT) following the Primary Pathway requirements. Emphasis will be placed on patient safety and comfort while professional values, attitudes, and behaviors are upheld. (Su) Prerequisite Courses: Minimum 2.5 in MRIT 222 and MRIT 232 and MRIT 240 and MRIT 262 Placement Score: None Co-requisite Course: MRIT 295
MRIT295	MRI Certification Exam Prep	3	This course provides the student with instructional review and a self-examination process as preparation for the certification exam in MRI. Discussions will focus on the four content specifications for examination in magnetic resonance as outlined in the American Registry of Radiologic Technology (ARRT) primary pathway certification handbook. Students will have the opportunity to participate in an 8 hour registry review seminar.(Su) Prerequisite Courses: Minimum 2.5 in MRIT 222 and MRIT 232 and MRIT 240 and MRIT 262 Placement Score: None Co-requisite Course: MRIT 263
MUSC101	Vocal Jazz & Pop Ensemble	1	A select vocal ensemble specializing in jazz and contemporary music for mixed voices. Artistic and creative vocal skills, improvisation and interpretation are developed through ensemble, small group and solo performance. Participation in two to four concerts per semester is required. (F, Sp) Recommended: Music reading skills

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MUSC106	Private Music Lesson	2	Concentrated one-to-one training in vocal/instrumental skills, techniques and repertory available only to: Music majors pursuing secondary performance venues, provisional applicants to the LCC Music Program, qualifying dual-enrolled high school students intending to enter the LCC Music Program and currently enrolled LCC Theater majors.(F, Sp,Su) Prerequisite Course: None Placement Scores: Music Major Audition
MUSC108	Concert Choir	1	A larger student and community member mixed voice choir exploring diverse styles, genres, repertories and cultural traditions spanning the choral experience. General musicianship and training in choral singing are developed. Participation in two to four concerts per semester is required. (F, Sp) Prerequisite Courses: None Placement Scores: None Recommended: Music reading skills Course Note: A non-credit option is available for this class at the special rate of $100, course fees included. See the NCCE 200 listing (CRN 51825) in the Community and Continuing Education section.
MUSC119	Lansing Concert Band	1	A community band serving as the official band of the City of Lansing. The group performs throughout the year and plays all styles of music but primarily concentrates on traditional concert band literature. Students are required to play in public performances of the band. (F, Sp,Su) Prerequisite: Department Approval by Audition and Music reading skills
MUSC121	Percussion Ensemble	1	The Percussion Ensemble rehearses and performs works of various styles, genres, cultural traditions and repertories. Percussion techniques and musical skills are developed through ensemble, small group and solo performances. Participation in two to four concerts per semester is required. (F, Sp) Prerequisite: None Recommended: Music reading skills
MUSC122	Rock Band	1	The Rock Band rehearses and performs rock music of diverse styles, including cover songs as well as original compositions and arrangements by students. The instrumentation is open to the characteristic make-up of rock ensembles, including guitar, bass, keyboard, drum-set instruments and singers. Other instrumentalists may join to expand the ensemble. Participation in two to four concerts per semester is required. (F, Sp) Prerequisite Courses: None None Placement Scores: None Recommended: Music reading skills Course Note: A non-credit option is available for this class at the special rate of $100, course fees included. See the NCCE 200 listing (CRN 51826) in the Community and Continuing Education section.
MUSC123	Jazz Ensemble	1	The Jazz Ensemble rehearses and performs pieces of diverse styles from various periods in jazz history. Musical, interpretative and improvisational skills are developed through ensemble, small combo and solo performances. Participation in two to four concerts per semester is required. (F, Sp) Prerequisite Courses: None. Department Approval by Audition Required Placement Scores: None Recommended: Music reading skills Course Note: A non-credit option is available for this class at the special rate of $100, course fees included. See the NCCE 200 listing (CRN 51827) in the Community and Continuing Education section.
MUSC124	Multi-Instrumental Music Ensem	1	This course is dedicated to the exploration of new acoustic, electronic and electro-acoustic music ranging from open, aleatoric scores to fully determined notation. Compositional, improvisational and interpretative skills are developed through ensemble, small group and solo performances. (F,Sp) Prerequisite Courses: None Placement Scores: None Recommended: Music reading skills Course Note: A non-credit option is available for this class at the special rate of $100, course fees included. See the NCCE 200 listing (CRN 51828) in the Community and Continuing Education section.
MUSC138	Keyboard Harmony I	2	Music reading skills are required for this course. Keyboard Harmony I introduces fundamental keyboard skills primarily for music majors. Students develop facility in performing scales, arpeggios, intervals, chords, inversions, and diatonic harmonic progressions in all major and some minor keys. Pieces in two- to four-part textures are performed. Harmonizing melodies, simple transposition and reading lead sheets are introduced. (Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4
MUSC143	Beginning Piano I - Summer	1	Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords are introduced. Simple two hand pieces are performed. (Su) Prerequisite Course(s): None. Placement Score(s): None. Recommended: Music reading skills
MUSC144	Beginning Piano I	2	Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords are introduced. Simple two hand pieces are performed. (F, Sp) Prerequisite Courses: None Placement Scores: None Recommended: Music reading skills
MUSC145	Beginning Piano II	2	This course is designed to take the student up to an intermediate level of playing. Rhythmic subdivisions, more complex fingering, and new major and minor keys are introduced. Two-hand pieces are performed. (F, Sp) Prerequisite Courses: Minimum 2.0 in MUSC 144 Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MUSC155	Class Voice Commercial I	2	Beginning course designed to introduce students to vocal techniques and performance skills required in singing/performing commercial music. Breathing, posture, diction, tone production, interpretative skills, and microphone techniques are presented and developed. Students are required to attend live performances. (F, Sp, Su) Prerequisite: None
MUSC156	Class Voice Commercial II	2	The advanced course in a series of two, this course will refine techniques introduced in MUSC155. Students will prepare a final public performance. Students are required to attend live performances. (F,Sp,Su) Prerequisite: Minimum 2.0 in MUSC 155
MUSC157	Applied Lesson I	2	Concentrated one-to-one training in vocal/instrumental skills, techniques and repertory for Music majors only. Students must perform in Music Studio convocations and attend public concert events. Progression to the next level of Applied Lessons is by successfully passing a jury performance adjudicated by a Music faculty panel. (F, Sp) Prerequisite Courses: None. Music Major Audition Required Placement Scores: None
MUSC158	Applied Lesson II	2	Concentrated one-to-one training in vocal/instrumental skills, techniques and repertory for Music majors only. Students must perform in Music Studio convocations and attend public concert events. Progression to the next level of Applied Lessons is by successfully passing a jury performance adjudicated by a Music faculty panel. (F, Sp) Prerequisite Courses: Minimum 2.0 in MUSC 157 or Music Major Audition Placement Scores: None
MUSC163	Aural Skills I	1	Music reading skills are required for this course. Aural Skills I allows students to develop their aural capacity through exercises in beginning melodic and rhythmic dictation. The ability to sing melodies on sight through the use of solfeggio will also be developed. This is the first of two courses in freshman aural skills. (F) Prerequisite Course: None Placement Scores: None
MUSC164	Aural Skills II	1	This course allows students to develop their aural skills through intermediate exercises in melodic and rhythmic dictation. The ability to sightsing melodies through the use of solfeggio continue to be developed. This course is the second in a sequence of two freshman music major requirements. (Sp) Prerequisite: Minimum 2.0 in MUSC 163 Co-requisite Course(s): MUSC 194
MUSC168	Rudiments of Music	3	This course introduces students and beginning musicians to the basics of reading and notating music. Fundamentals of rhythm, meter, pitch, intervals, scales, chords, keys and simple harmonic progressions are reviewed. Elements of music are explored through musical examples drawn from a variety of styles and genres. (F) Prerequisite Courses: None Placement Scores: None
MUSC181	Class Voice I - Summer	1	The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. (Su) Prerequisite: None
MUSC182	Class Voice I	2	The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. (F, Sp) Prerequisite: None
MUSC183	Class Voice II	2	The advanced course in a series of two. This course will refine techniques, such as breathing, posture, diction, tone production, and stage presence, introduced in MUSC182. Students are required to attend live performances. (F, Sp) Prerequisite: Minimum 2.0 in MUSC 182
MUSC187	Class Guitar - Summer	1	This course is for beginners and experienced players who desire note-reading skills. Folk, blues, and classical guitar traditions are presented using basic plectrum technique. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. (Su) Prerequisite: None
MUSC188	Class Guitar	2	This course is for beginners and experienced players who desire note reading skills. Folk, blues, and classical guitar traditions are presented using basic plectrum technique. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. (F, Sp) Prerequisite: None
MUSC193	Music Theory I	4	First-semester freshman-level course in tonal harmony covering concepts and applications of scales, intervals, keys, rhythm, diatonic chords, inversions and basic part-writing for four voices. Harmonic progressions, cadence structures and simple forms are studied through both analysis and student composition. Introduces principles of counterpoint and jazz theory. (F, Sp) Prerequisite Course: None Placement Scores: Reading Level 5 or (ENGL 098 concurrently or ENGL 099 concurrently) Co-requisite Courses: MUSC 163 and MUSC 168

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MUSC194	Music Theory II	4	Second-semester freshman-level course in tonal harmony covering diatonic seventh chords, non-chord tones, secondary functions, modulations and larger musical forms. Focus on advancing students' skills in part-writing, analysis, score-reading and counterpoint. Concepts are applied through student composition in classical, jazz and/or popular styles. (Sp) Prerequisite: Minimum 2.0 in MUSC 193 and Reading Level 5 or (ENGL 098 or ENGL 099 concurrently). Co-requisite Course(s): MUSC 164
MUSC197	Music Tech 1 Home Studio Prod	2	First in a sequence of two courses designed to introduce students to the role of computers in music. Students will learn the fundamental concepts of MIDI and digital audio recording and editing, mixing and producing work suitable for diverse media applications. Additionally, exploration of music notation and printing software is included for music majors.(F,Sp,Su) Prerequisite Course: None Placement Scores: None Recommended: Familiarity with computers; music reading skills and familiarity with music keyboard
MUSC199	Music Appreciation	3	Designed for non-music majors, this course develops well-informed, focused listening. Students are acquainted with representative composers, compositions, and musical characteristics of a variety of style periods from early music through 20th Century music from selected cultural centers including the United States and Europe. Students are required to attend live performances. (F,Sp,Su) Prerequisite Course: None Placement Scores: (Reading Level 5 and Writing Level 6) or (ENGL 098 concurrently or ENGL 099 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx
MUSC237	Musical Theater Performance	2	An introductory course for vocalists and actors emphasizing applying acting techniques to song performance. Students will explore music from a preselected range of musical theatre styles. Focus is on stage presence, movement, and advancing dramatic action through the song. The class concludes with a public performance. (Sp) Prerequisite: None Recommended: Music Reading Skills
MUSC240	Musical Cultures to 1750	4	An historical and analytical survey of music and its development from Antiquity through 1750. Emphasizes an understanding of both Western and non-western genres, styles, composers and literature in relationship to historical, geographical and cultural contexts. Strengthens aural analytical skills and understanding of fundamental musical concepts. (F,Sp) Prerequisite: (Reading Level 5 and Writing Level 4) or ENGL 098 or 099 concurrently.
MUSC241	Musical Cultures 1750-Present	4	An historical and analytical survey of music and its development from 1750 to the present. Emphasizes an understanding of both Western and non-western genres, styles, composers, literature and emerging world musics in relationship to historical, geographical and cultural contexts. Strengthens aural analytical skills and understanding of fundamental musical concepts. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 4 or (ENGL 098 or ENGL 099 concurrently)
MUSC246	Appreciation of Jazz	2	An overview of the emergence, development and relevance of two of America's most genuine musical art forms. Stylistic, cultural, and sociological investigations of such musics provide a mirror to the ever-changing popular American soundscape. Informed listening introduces: major creator/performers, genres, expressions, and reflections of an increasingly global and technological musical world. (F) Prerequisite: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MUSC247	History and Culture of Rock	2	Survey of the origins, elements, developments, and reflections of Rock and Roll from its roots in the 1920s to the present. Major trends and artists are considered in stylistic, social, commercial, and global perspectives. Informed listening and comparative analyses reveal complex issues continuously redefining Rock music and its cultural legacy. (Sp) Prerequisite: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
MUSC255	Music Business & Management	4	An introduction to the business aspects of the music industry. Areas covered include copyrights, contracts, trademarks, publishing, recording and record company operations, personal managers, booking agents, concert promotions, and unions. Aspects of band management are also covered, including intra-band arrangements, promotion and sales, road management, and basic organizational information. (F) Prerequisite Courses: None Placement Scores: Reading Level 4 and Writing Level 4
MUSC257	Applied Lesson III	2	Concentrated one-to-one training in vocal/instrumental skills, techniques and repertory for Music majors only. Students must perform in Music Studio convocations and attend public concert events. Progression to the next level of Applied Lessons is by successfully passing a jury performance adjudicated by a Music faculty panel. (F,Sp) Prerequisite Courses: Minimum 2.0 in MUSC 158 or Music Major Audition Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
MUSC258	Applied Lesson IV	2	Concentrated one-to-one training in vocal/instrumental skills, techniques and repertory for Music majors only. Students must perform in Music Studio convocations and attend public concert events. A final jury or recital performance is adjudicated by a music faculty panel. (F,Sp) Prerequisite Courses: Minimum 2.0 in MUSC 257 or Music Major Audition Placement Scores: None
MUSC270	Rock Guitar	2	A presentation on fundamental rhythm and lead guitar techniques and music theory concepts applicable to rock music from its rhythm and blues origin to the present, as well as other related popular styles. Student must provide own guitar. Students may be required to attend live performances. (F,Sp,Su) Prerequisite: None
MUSC280	Private Composition	1	Private coaching/instruction for music majors, 40 minutes per week, in musical composition, giving attention and suggestion to melody, harmony, chord substitution, and formal design. Students are required to attend live performances. (F,Sp) Prerequisite Courses: None. Department Approval Required Placement Scores: None
MUSC292	Arranging & Songwriting	3	Sophomore-level course in the practical techniques of the working songwriter and popular music composer. Focus on advancing student's skills in melody, harmony, form, instrumentation, and song logic. Concepts of solo writing and collaboration are introduced. The development of an individual's unique compositional "voice" is encouraged. (F) Prerequisite Courses: Minimum 2.0 in MUSC 193 Placement Scores: Reading Level 5
MUSC296	Music Internship	3	A worksite experience that serves as a business-related course for music management students. Students will work at venues that support music performance, promotions, business, management, and/or recording. Regularly scheduled progress reports will be given and discussed with the supervising faculty member.(F,Sp,Su) Prerequisite Courses: None. Department Approval Required Placement Scores: None
MUSC298	Music Tech 2 Advanced Studio	3	A continuation of the Intro to Music Technologies I course. The student will proceed to more advanced training including manipulation of MIDI, digital audio editing, and processing, sound design and synthesis. Special emphasis is placed on the synchronization of software and exploration of music styles and techniques of electronic based performance. (Sp) Prerequisite: Minimum 2.0 in MUSC 197 Recommended: Computer experience; Music reading skills
NCBD050	Building/Design Special Topics	0	Skilled tradespersons and job seekers who need to gain skills and knowledge in order to obtain or retain employment in building, design, and industries utilizing tradespersons. (F,Sp, Su) Prerequisite: None
NCBD101	EPA RRP Certification Course	0	Contractors performing renovation, repair and painting projects that disturb lead-based coatings (including lead paint, shellac or varnish) in child-occupied facilities built before 1978 must be certified and must follow specific work practices to prevent lead contamination. Prerequisites: None Course Note: Cost of this seminar is $40.
NCBD102	MIOSHA Training Boot Camp	0	This MIOSHA Training Institute (MTI) Boot Camp is for those students who have not taken any MTI courses previously and have an interest in improving their knowledge of safety and health in the workplace. This Boot Camp is taught by experienced MIOSHA Consultation and Training (CET) consultants. This program provides continuing education credits, maintenance points, and an opportunity for participants to grow in technical expertise. By attending MTI courses, an employer may qualify for "good faith" credits during a MIOSHA inspection which may lead to a reduction in penalty points. Prerequisite: None Course Note: Cost of this seminar is $720. If you have any questions, call Community and Continuing Education at (517) 483-1415.
NCCE050	Special Topics	0	These non-credit seminars explore current topics. Specific content may vary with each offering. (F,Sp, Su) Prerequisite: None
NCCE100	Comp/Multimedia/Tech Seminars	0	Seminars in this non-credit series explore the use of applied technology. Students learn how to utilize software and multimedia features to enhance their creativity or improve needed skills. (F,Sp,Su) Prerequisite: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCCE200	Creative Arts	0	This non-credit series of courses focuses on personal creativity through music and the arts. Seminars provide students hands-on opportunities in the areas of instrumental or vocal music, photography, or the visual and performing arts. (F,Sp,Su) Prerequisite: None
NCCE300	Language/Communication Seminar	0	These non-credit seminars allow students to discover the basic premises and subtle nuances of the written and spoken word. Classes in this series may offer studies in foreign language and culture, as well as insights into the English language. (F,Sp,Su) Prerequisite: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
NCCE400	Business and Finance Seminars	0	These non-credit seminars focus on issues relevant to personal finance and business. Students will have opportunities to learn strategies to more effectively manage their income and plan for the future. (F,Sp,Su) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx. Prerequisite: None
NCCE500	Science/Technical/Trade Sem	0	These non-credit seminars provide students with opportunities for personal enrichment through nature, technology, and vocational topics. Hands-on sessions allow participants the chance to expand their personal and professional interests through science and technology. (F,Sp,Su) Prerequisite: None
NCCE600	Citizenship and Law	0	This series of non-credit seminars provides participants opportunities to gain knowledge about political issues, current events, and civil liberties. Through lectures and discussions students will examine their values, learn more about national and international topics, and become more informed citizens. (F,Sp,Su) Prerequisite: None
NCCE700	Health and Wellness Seminars	0	Seminars in this non-credit series are designed to promote personal well-being and increase awareness of physical and emotional health. Students will gain insight into strategies to enhance their daily life. (F,Sp,Su) Prerequisite: None
NCCE800	Personal Interest Seminars	0	This wide variety of non-credit seminars provides students an opportunity to explore personal interest topics. These diverse classes have broad appeal for learners of all ages. Format for individual classes will vary depending on the topic. (F,Sp,Su) Prerequisite: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
NCCE900	Study Abroad	0	These non-credit travel opportunities allow students to study abroad and experience another language and culture first-hand. Through these life enriching experiences, participants will gain an appreciation and knowledge of the international community. (Sp) Prerequisite: None
NCCT050	Noncredit Special Topics	0	Training will be offered in current topics. (F, Sp, Su) Prerequisite: None
NCCT100	Noncredit Software & Tech	0	Training in this series will be offered in computers, software, and technology. (F,Sp, Su) Prerequisite: None
NCCT200	Noncredit Industrial Trades	0	Training in this series will focus on the needs of any industrial occupations. (F,Sp, Su) Prerequisite: None
NCCT300	Noncredit Language & Comm	0	Training in this series willl be in language and communication topics. (F,Sp, Su) Prerequisite: None
NCCT400	Noncredit Business & Mgt	0	Training in this series will cover topics in business, management, and entrepreneur. (F,Sp, Su) Prerequisite: None
NCCT500	Noncredit Legal and Finance	0	Training in this series will be in topics of legal and finance. (F,Sp, Su) Prerequisite: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCCT600	Noncredit Prof Cert & Licenses	0	Training in this series will be to obtain professional certification, license, or re-licensure. (F,Sp, Su) Prerequisite: None
NCCT700	Noncredit Healthcare Prof	0	Training in this series will be in the healthcare topics. (F,Sp, Su) Prerequisite: None
NCCT800	Noncredit Professional Develop	0	Training in this series will focus on topics of interest for professional development. (F,Sp, Su) Prerequisite: None
NCCT900	Noncredit New Careers	0	Training in this series will focus on topics for developing knowledge and skills in new careers. (F,Sp, Su) Prerequisite: None
NCEL010	Discussions (Open Lab)	0	This 8-week non-credit course is an Open Lab for all non-credit ESOL students and will provide students with time and assistance in further developing, applying, and practicing the skills and strategies learned in all Level 2 & 3 courses. The Open Lab will also assist students in practicing conversational skills for workplace and academic success. (F,Sp,Su) Prerequisite Course: None Placement Scores: ESL Test AVERAGE 68-99 and listening >50. Co-Requisite Courses: Students who sign up in NCEL 010 must also be signed up in at least one of the following; NCEL 021, NCEL 022, NCEL 023, NCEL 031, NCEL 032, or NCEL 033 Course Note: For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon’ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $0.
NCEL021	Grammar/Writing II	0	This 8-week non-credit course is the high-beginning ESOL grammar and writing course for English as a Second Language learners. This course focuses on developing English grammar and writing skills necessary for college and workplace success. Students will be able to improve on grammar and sentence structure, vocabulary, and paragraph writing skills. Prerequisite Course: ESOL050 and ESOL 055 or Placement Scores. Placement Scores: ESL Test AVERAGE 68-88 (no score below 63) and Listening >50. Co-Requisite Course: NCEL 010 Discussions (Open Lab) Course Note: This 8-week course is recommended to be taken with NCEL 022 the Read, Speak, and Listen course. For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon’ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $25.
NCEL022	Read, Speak, and Listen II	0	This 8-week non-credit course is the high-beginning ESOL reading, speaking, and listening course for English as a Second Language learners. This course focuses on assisting students in further developing fluency and accuracy in speaking and reading skills for college and workplace success. Students will be able to develop and apply additional strategies for comprehending and processing written and spoken passages. Students will be able to expand their vocabulary building skills and improve their reading strategies, reading and listening comprehension, and speaking skills. Audio equipment and computers are available to aid students in developing proficiency. (F, Sp, Su) Prerequisite Course: ESOL 050 and ESOL 055 or Placement Scores. Placement Scores: ESL Test AVERAGE 68-88 (no score below 63), and Listening >50. Co-Requisite Course: NCEL 010 Discussions (Open Lab) Course Note: This 8-week course is recommended to be taken with the NCEL 021 Grammar/Writing course. For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon’ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $25.
NCEL023	Multi-Skills II	0	This 8-week non-credit course is the high-beginning ESOL Multi-skills course for English as a Second Language learners. This course focuses on improving and building upon the reading, writing, grammar, speaking, and listening skills and strategies acquired in previous courses. (F, Sp, Su) Prerequisite Course: NCEL 021 and NCEL 022, or Placement Scores, or Department Approval. Placement Scores: ESL Test AVERAGE 68-88 (no score below 63) and Listening >50. Course Note: For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon’ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $25.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCEL031	Grammar/Writing III	0	This 8-week non-credit course is the intermediate ESOL grammar and writing course for English as a Second Language learners. This course focuses on further developing English grammar and writing skills necessary for college and workplace success. This course is taught in a group and language lab setting, as students continue to improve their knowledge of appropriate grammatical structures, academic and workplace vocabulary, and writing skills. (F,Sp,Su) Prerequisite Course: ESOL 070 and ESOL 075 or Placement Scores. Placement Scores: ESL Test AVERAGE 89-99 (no score below 84) and listening >50. Co-Requisite Course: NCEL 010 Discussions (Open Lab) Course Note: This 8-week course recommended to be taken with NCEL 032, Read, Speak, and Listen III. For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon'ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $25.
NCEL032	Read, Speak and Listen III	0	This 8-week non-credit course is the intermediate ESOL reading, speaking, and listening course for English as a Second Language learners. This course focuses on assisting students in further developing fluency and accuracy in vocabulary development, speaking and academic reading success. Students will be able to develop and apply more advanced strategies for comprehending and processing written and spoken passages while developing a more critical and evaluative stance while sharing ideas and expressing thoughts during individual conversations and group presentations. (F,Sp,Su) Prerequisite Course: ESOL 070 and ESOL 75 or Placement Scores. Placement Scores: ESL Test AVERAGE 89-99 (no score below 84), and Listening >50. Co-Requisite Course: NCEL 010 Discussions (Open Lab) Course Note: This 8-week course recommended to be taken with NCEL 031, Read, Speak, and Listen. For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon'ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $25.
NCEL033	Multi-Skills III	0	This 8-week non-credit course is the intermediate ESOL Multi-skills course for English as a Second Language learners. This course focuses on improving and building upon the skills and strategies acquired in NCEL 031 and 032. (F,Sp,Su) Prerequisite Course: NCEL 031 and NCEL 032, or Placement Scores or Department Approval. Placement Scores: ESL Test AVERAGE 89-99 (ESOL 3; no score below 84), and Listening >50 (ESLL 1). Co-Requisite Course: NCEL 010 Discussions (Open Lab) Course Note: For admissions and intake questions please contact Yvonne Creamer at 517-483-1196. For general questions please contact Shon'ta Dwyer at the Lansing Community College Center for Workforce Transition at 517-492-5580. Cost of this class is $25.
NCEL101	ESOL Skills Lab	0	This is a noncredit, zero credit course/lab. The focus is on providing direct, specific instruction to help you earn a passing grade in your college-level courses. The lab embeds discipline-specific academic ESOL skills instruction focused on the content of the college-level classes in which ESOL Level 4 and 5 students may enroll. Skill areas include critical reading (text and visual information), academic writing/research processes, academic vocabulary expansion, textbook navigation, study skills, and understanding of expectations for college-level credit classes. This course is graded P/Z. A grade of P represents satisfactory participation in lab activities and does not guarantee a passing grade in either ESOL Levels 4 or 5 or in concurrent-enrollment college-level classes. This lab is open to any non-native English speaker enrolled in a college-level class. Prerequisite Courses: Minimum 2.5 in ESOL 090 and ESOL 095 or ESOL Level 4 Placement Scores: None
NCHE101	Heart Saver CPR/AED	0	The Heartsaver CPR/AED course teaches CPR, AED use, and relief of choking in adults and children. It also teaches infant CPR and relief of choking, and the use of barrier devices for all ages. (F,Sp,Su) Prerequisite: None Course Note: Cost of this seminar is $88.00
NCHE102	AHA BLS Provider CPR	0	This non-credit American Heart Association (AHA) seminar is designed to provide healthcare professionals the ability to recognize several life-threatening emergencies, provide Basic Life Support (BLS) also known as CPR, use an AED with BVM, how to work as a team, and choking management. The seminar is intended for individuals working or planning to work in the healthcare profession, and was formerly called CPR for Healthcare Professionals. This course meets the needs for anyone needing a BLS Provider CPR certification. Persons wishing to be certified must pass both the physical skills and written test sessions. (F,Sp,Su) Prerequisite: None Placement Score: None Course Note: Cost of this seminar is $88.00. If you have any questions, call Continuing Education at (517) 483-1415.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCHE103	AHA BLS Provider Renewal CPR	0	This non credit American Heart Association (AHA) seminar is designed to renew the provider status of healthcare professionals possessing a valid Basic Life Support (BLS) Provider card. Focus is on the ability to recognize several life-threatening emergencies, provide CPR, use an AED, and relieve choking in a safe, timely and effective manner. This course was formerly known as CPR Renewal. This course meets the needs for anyone needing a BLS CPR recertification. Persons wishing to be certified must pass both the physical skills and written test sessions. (F,Sp,Su) Prerequisite: Current AHA Basic Life Support (BLS) Provider Card Placement Score: None Course Note: Cost of this seminar is $76. If you are late for class you will not be permitted to attend the session.
NCHE104	AHA BLS Instructor CPR	0	This non-credit American Heart Association (AHA) seminar is to provide the opportunity and forum to acquire knowledge and skills to instruct and evaluate students in an AHA Basic Life Support (BLS) Provider course (CPR). This seminar adheres to the American Heart Association guidelines and criteria. This course was formerly known as CPR Instructor. This course meets the needs for anyone needing a BLS Instructor CPR certification. Persons wishing to be certified must pass both the physical skills and written test sessions. (F,Sp,Su) Prerequisite: Current (AHA) Basic Life Support (BLS) Provider Card, and American Heart Association (AHA) Core Instructor Course Completion Certificate Placement Score: None Course Note: Cost of this seminar is $200. If you are late for class you will not be permitted to attend the session.
NCHE105	AHA BLS Instructor Renewal CPR	0	This non-credit American Heart Association (AHA) seminar is designed to recertify Basic Life Support (BLS) CPR instructors and instructor trainers who have a valid American Heart Association BLS Instructor card. The student will be assessed on his/her ability to instruct and evaluate a student's progress in the Basic Life Support (BLS) Provider CPR courses according to AHA guidelines. (F,Sp,Su) Prerequisite: Current AHA Basic Life Support (BLS) Provider CPR Card and Current BLS Instructor Card Placement Score: None Course Note: Cost of this seminar is $76. If you are late for class you will not be permitted to attend the session.
NCHE106	Peds 1st Aid/CPR for Daycare	0	This non credit seminar provides CPR and First Aid for Daycare Providers, teaching how to manage illness and injuries in a child in the first few minutes until professional help arrives. Topics include first aid basics, medical emergencies, injury emergencies, environmental emergencies, optional first aid topics, CPR and AED usage.(F,Sp) Prerequisite: None Course Note: Cost of this seminar is $125. If you are late for class you will not be permitted to attend the session.
NCHE110	Heart Saver First Aid	0	The Heartsaver First Aid Course teaches how to manage illness and injuries in the first few minutes until professional help arrives. Course content includes general principles, medical emergencies, and injury emergencies. Prerequisite: None Course Note: Cost of this seminar is $***.
NCHE120	Self-Paced Hlth Prov CPR Renew	0	This seminar is designed to complete the skills requirement for individuals who completed the BLS Healthcare Provider Online Part 1 self-paced course through the American Heart Association. This course focuses on skills review and skills validation testing. (F,Sp,Su) Prerequisite: Current Basic Life Support CPR and American Heart Association Part 1 Course Completion Certificate and Department Approval Course Note: Cost of this seminar is $***.
NCHE206	Cardiac Dysrhythmia Interpreta	0	This non credit course introduces the student to identification of common dysrhythmias seen on a monitor or telemetry unit. Content will include criteria, causes, hemodynamic effects, and treatment of dysrhythmias according to Advanced Cardiac Life Support (ACLS) guidelines. Use of monitoring equipment is integrated within the course content. (F,Sp,Su) Prerequisite: None Course Note: Cost of this seminar is $282.
NCHE207	Cardiac Dysrythmia Refresher	0	Any EMT professionals who need to update their skills in reading cardiac dysrythmias will benefit from this refresher taught by an expert. Learn new tips and techniques which will enable you to be more knowledgeable when knowledge is needed most. (Fa, Sp, Su) Prerequisite: None Course Note: Cost of this seminar is $109. If you have any questions, call Community and Continuing Education at (517) 483-1415.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCHE210	PALS Training	0	This non credit seminar is designed for healthcare providers who participate in the care of pediatric patients. Focus is on developing knowledge and skills necessary to efficiently and effectively manage critically ill infants and children. All students must be currently working in Healthcare with children. (F,Sp,Su) Prerequisite: Current Basic Life Support (BLS) for Healthcare Provider Card Course Note: Cost of this seminar is $266.
NCHE211	PALS Renewal	0	This non credit seminar is designed to renew the provider status of healthcare professionals currently possessing a valid Pediatric Advanced Life Support (PALS) card. Focus is on developing knowledge and skills necessary to efficiently and effectively manage critically ill infants and children. All students must be currently working in Healthcare with children. (F,Sp,Su) Prerequisite: Current Basic Life Support (BLS) for Healthcare Provider Card and Current PALS Provider Card Course Note: Cost of this seminar is $173.
NCHE212	PALS Instructor Training	0	This course teaches practicing healthcare professionals who are certified in Pediatric Advanced Life Support (PALS) and Basic Life Support (BLS) to become a certified American Heart Association (PALS) Instructor. (F, Sp) Prerequisite: None Course Note: Cost of this seminar is $215. If you are late for class you will not be permitted to attend the session.
NCHE213	PALS Instructor Renewal	0	This course recertifies a current PALS instructor in their credentials as an AHA PALS instructor. (F, Sp) Prerequisite: Both current PALS Instructor Card and CPR card are necessary to be able to enroll in this course. Course Note: Cost of this seminar is $90. If you are late for class you will not be permitted to attend the session.
NCHE227	Health Cont Ed Spec Topics	0	This course offers students the opportunity to learn new health career skills and knowledge. Specific up-to-date content will vary with each topic presented. (F,Sp,Su) Prerequisite: Determined by Section
NCHE230	ACLS Training Seminar	0	This non credit seminar is designed for members of the healthcare team to develop knowledge and skills in Advanced Cardiac Life Support (ACLS). Focus is on enhancing skills in the treatment of the adult victim of cardiac arrest or cardiopulmonary emergencies using simulated clinical scenarios. All students must be currently working in Healthcare. (F,Sp,Su) Prerequisite: Current Basic Life (BLS) Support for Healthcare Provider Card Course Note: Cost of this seminar is $266.
NCHE235	ACLS Renewal	0	This non credit seminar is designed to renew the provider status of healthcare professionals currently possessing a valid Advanced Cardiac Life Support (ACLS) card. Focus is on enhancing skills in the treatment of the adult victim of cardiac arrest or cardiopulmonary emergencies using simulated clinical scenarios. All students must be currently working in Healthcare. (F,Sp,Su) Prerequisite: Current Basic Life Support (BLS) for Healthcare Provider Card Course Note: Cost of this seminar is $173. If you are late for class you will not be permitted to attend the session.
NCHE236	ACLS Instructor Training	0	This course teaches a practicing healthcare professional who is certified in ACLS and BLS to become a certified American Heart Association ACLS Instructor. (F, Sp) Prerequisite: None Course Note: Cost of this seminar is $175. If you are late for class you will not be permitted to attend the session.
NCHE237	ACLS Instructor Renewal	0	This course recertifies a current ACLS instructor in their credentials as an AHA ACLS instructor. (F,Sp) Prerequisite: Both current ACLS Instructor Card and CPR card necessary to be able to enroll in this course. Course Note: Cost of this seminar is $86. If you are late for class you will not be permitted to attend the session.
NCHE260	EMS Refresher	0	This non credit course serves as a formal refresher to renew national registry and/or State of Michigan EMS license. Designed for current State of Michigan Medical First Responder (MFR), Emergency Medical Technician Basic and Specialist (EMT-B, EMT-S), and Paramedic who need to attend a formal refresher course or would prefer to obtain continuing education via a state-approved program of study. (Sp) Prerequisite: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCHE261	EMT Specialist Bridge	0	This is a fifty-six (56) hour bridge course identified by and in accordance with the State of Michigan Guidelines for current EMT - Specialists to transition to the new licensing process. It will cover medication administration and documentation for all of the different human body systems as well as public health issues, medical legal concerns and Documentation. Those individuals who wish to remain licenses as a Michigan Specialist beyond April 1, 2013 will be required to complete this bridge course. Specialist bridge courses will only be offered through December 31, 2012. After December 31, 2012, the State of Michigan will not approve any additional courses. Beginning April 1, 2013 the new Specialist course will be offered in Michigan. Any current Specialist who does not complete a bridge course by December 31, 2012 with either revert their license to a Basic EMT status or complete the entire new Specialist course. (F, SP, Su) Prerequisite: None Course Note: Cost of this course is $575.
NCHE270	EMS I/C Refresher	0	This non credit course serve as a formal instructor/coordinator refresher for State of Michigan EMS instructors/coordinators. Course meets State of Michigan I/C license renewal requirements. (Sp) Prerequisite: None
NCIT050	Special Topics Info Technology	0	This course will provide special topic sections to students needing technology instruction for professional purposes. Specific content may vary with each offering. (F,Sp, Su) Prerequisite: None
NCIT116	Excellent Customer Service	0	Customers are vital to any business, and in this course, you will acquire the knowledge, skills, and mindset to be able to work with any customers you may encounter, including how to handle customer objections, how to handle difficult customers, and how to keep customers coming back to your business. (F,Sp,Su) Prerequisite: None Course Note: Cost of this seminar is $59.
NCIT117	Business Writing and Grammar	0	By participating in this course, you will learn how to write business letters, documents, and white paper summaries. You will feel comfortable with your usage of grammar and when your new manager asks you to write up meeting minutes, you will not panic, you will efficiently compose key points and messages into a useful document. (F,Sp,Su) Prerequisite: None Course Note: Cost of this seminar is $59.
NCLE050	Special Topics Language	0	This course will provide special topic sections to students needing language education for obtaining a professional credential. Specific content may vary with each offering. (F,Sp, Su) Prerequisite: None
NCMA101	Math Refresher	0	One-week refresher workshop for students who place below college level math and wish to review the mathematical concepts. The goal of this workshop course is to prepare students to retake the Accuplacer test so that they might improve their placement Math Level. An online learning platform will be utilized to determine the individualized content for each student. Problem solving and test taking strategies will be included. Prerequisite Courses: None Placement Scores: None
NCME050	Special Topics Management	0	This course will provide special topic sections to students needing management education for professional purposes. Specific content may vary with each offering. (F, Sp, Su) Prerequisite: None
NCOL100	Noncredit Online Learning	0	New! Beginning 2013 Spring semester, the Community and Continuing Education department will offer a wide array of affordable and convenient online, noncredit classes. Each course is taught by an expert instructor, many of whom are nationally known. These classes connect you to hundreds of professional and personal learning opportunities. Our online courses are affordable, fun, fast, convenient, and geared just for you. We encourage you to browse our catalog by visiting the LCC Lifelong Learning website: http://www.lcc.edu/lifelong/ and select Online Learning. (F,Sp,Su) Prerequisite: None Course Note: Cost of all Noncredit Online Learning classes is $99. If you have any questions, please call Community and Continuing Education at (517) 483-1415.
NCOL101	Accuplacer Test Prep	0	Accuplacer Test Preparation Prerequisite: None.
NCPS050	Special Topics Public Safety	0	This course will provide special topic sections to students in public safety. Specific content may vary with each offering. (F,Sp, Su) Prerequisite: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NCPS103	Incident Safety Officer	0	This course is an incident-specific, scene-oriented course designed to teach what a Safety Officer at an incident needs to know using practice scenarios to convey instructional points. Prerequisite: None Course Note: Cost of this seminar is $129. If you have any questions, call Community and Continuing Education at (517) 483-1415.
NCPS105	Flashover Survival	0	In this essential training seminar, firefighters will learn survival techniques in flashover environments. Then by applying these techniques in a practice session, fire service professionals will be much better prepared when faced with flashover situations. (F, SP, Su) Prerequisite: None Course Note: Cost of this seminar is $34.50.
NCPS106	Advanced Flashover Survival	0	This course will continue the instruction from NCPS 105 Flashover Survival so that fire service professionals are better equipped and prepared to battle dangerous flashover situations safely and effectively. (Fa, Sp, Su) Prerequisite: None Course Note: Cost of this course is $34.50. If you have any questions, call Community and Continuing Education at (517)483-1415.
NCPS107	Strategy and Tactics (STICO)	0	This course is designed to meet the needs of Company Officers responsible for managing the operations of one or more companies during structural fire fighting operations. STICO is designed to develop the management skills needed by company officers to accomplish assigned tactics at structure fires. (Fa, Sp, Su) Prerequisite: None Course Note: Cost of this seminar is $135. If you have any questions, call Community and Continuing Education at (517)483-1415.
NCPS108	Company Officer I and II	0	The purpose of the Fire Officer I course is to provide entry-level fire officers with the knowledge and skills to meet the minimum job performance requirements for paid and volunteer fire officers. Fire Officer I candidates must demonstrate the knowledge and skills necessary to function safely and effectively as an integral member of a firefighter team. When engaged in hazardous activities, the Fire Officer I works under direct supervision of a senior company officer and as a team leader. The purpose of the Fire Officer II course is to provide officers at the second level of progression with the knowledge and skills to meet the minimum job performance requirements for paid and volunteer fire officers. Fire Officer II candidates must demonstrate the depth of knowledge and skills necessary to function under general supervision. A person trained at the Fire Officer II level will function safely and effectively as an integral member of a team of equally or less experienced firefighters to accomplish a series of tasks. (Fa, Sp, Su) Prerequisite: None <vr> Course Note: Cost of this course is $688. If you have any questions, call Community and Continuing Education at (517)483-1415.
NCRW100	Foundations for Success	0	Designed to teach essential reading and writing skills and to introduce the student to the foundations of a successful student life. Also serves to prepare students for high school completion exams. Prerequisite Course(s): None. Department Approval Required Placement Score(s): Reading Level 1 and Writing Level 1.
NCRW101	Read/Write Refresh: Achieve360	0	The purpose of this non-credit refresher is to prepare students to retake the placement tests for Reading and Writing. The course includes a review of essential reading and writing skills, focusing on main idea, supporting details, inferences, organizational patterns, topic sentences, thesis statements, paragraph and essay unity, and support for conclusions. (F,Sp,Su) Prerequisite: None
NCSS101	Non-Credit Student Support	0	This lab embeds discipline-specific academic reading and writing skills instruction within college-level courses. Skill areas include critical reading (text and visual information), writing/research processes, vocabulary expansion, and textbook navigation. Students must participate in the lab two hours per week but may choose from these days and times to fit their schedules. Prerequisite: None Placement Scores: Reading Level 2 and Writing Level 2 and concurrent enrollment in PSYC 200 or RELG 150, or SOCL 120
NDXT100	Neuroanatomy and Physiology	3	This course provides an introduction to neuroanatomy and physiology necessary for working in the diverse field of Neurodiagnostics. Students will discuss the structures and functions of the Nervous System. Topics include the Central Nervous System, Peripheral Nervous System, and blood supply. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Co-requisite Courses: NDXT 101 and NDXT 102 and NDXT 120

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NDXT101	Neurodiagnostic Procedures	3	This course provides an introduction to the routine Neurodiagnostic testing procedures performed. Students will discuss the Scope of Practice specific to the Neurodiagnostic Technologist. Topics will include medical terminology, diagnostic procedures, and common neurological disorders. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Co-requisite Courses: NDXT 100 and NDXT 102 and NDXT 120
NDXT102	EEG Applications	3	This course provides the basic skills necessary to accurately measure and apply electrodes. Students will discuss the standards for electrode placement based on the International 10-20 System of Electrode Placement. Topics will include skin preparation, skin safety, and modification techniques. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Co-requisite Courses: NDXT 100 and NDXT 101 and NDXT 120
NDXT120	EEG Pre-Clinical Preparation	3	This course prepares the EEG student for safe participation in clinical education within a Neurodiagnostic department. Students will explore and discuss the importance of patient safety, patient assessment, and equipment placement. While most of the course is delivered online, students will practice and master various procedures in a scheduled laboratory setting. (F) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Co-requisite Courses: NDXT 100 and NDXT 101 and NDXT 102
NDXT130	Principles of EEG	2	This course explores the history of electroencephalograms (EEG). Students will discuss the use of EEG's in the diagnosis of neurological diseases. Topics will include the national competency standards for performing EEG's, fundamentals of patient care, and HIPAA compliance. (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 100 and NDXT 101 and NDXT 102 and NDXT 120 Placement Score: None Co-requisite Courses: NDXT 131 and NDXT 132
NDXT131	Electricity Principles/Safety	1	This course familiarizes the Neurodiagnostic student with the principles of electricity and electrical safety. Students will discuss digital EEG, EEG recordings, and the digital EEG display. Topics will include risks related to current, grounding, and factors contributing to electrical injury. (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 100 and NDXT 101 and NDXT 102 and NDXT 120 Placement Score: None Co-requisite Courses: NDXT 130 and NDXT 132
NDXT132	EEG Instrumentation I	2	This course provides a foundation for EEG instrumentation. Students will discuss the basic requirements of the EEG system. Topics will include amplifier settings, filters, chart speeds, calibration methods, system selections, and post-acquisition setting adjustments. (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 100 and NDXT 101 and NDXT 102 and NDXT 120 Placement Score: None Co-requisite Courses: NDXT 130 and NDXT 131
NDXT200	EEG Procedures & Pathology I	1	This course explores the normal EEG patterns in adults, during both awake and sleep cycles. Students will discuss the normal EEG variants. Topics will include waveform descriptions and medication effects on the EEG. (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 130 and NDXT 131 and NDXT 132 Placement Score: None Co-requisite Courses: NDXT 201 and NDXT 202
NDXT201	EEG Instrumentation II	2	This course provides the EEG student with the technical skills needed to analyze waveforms and polarity. Students will discuss techniques needed to improve EEG recording quality. Topics will include recording annotations, patient considerations based on specific need, and challenges of performing bedside procedures. (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 130 and NDXT 131 and NDXT 132 Placement Score: None Co-requisite Courses: NDXT 200 and NDXT 202
NDXT202	EEG Quality Control	1	This course explores the physiological and non-physiological artifacts found in routine EEG recordings. Students will discuss the factors that contribute to artifacts and troubleshoot the ways to eliminate them. Topics will include impedance and common mode rejection (CMR). (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 130 and NDXT 131 and NDXT 132 Placement Score: None Co-requisite Courses: NDXT 200 and NDXT 201

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NDXT220	EEG Clinical Practice I	3	This is the first in a series of two clinical courses that provides the necessary supervised clinical education needed for the EEG student to competently perform routine procedures and recognize patient considerations that affect diagnosis. Emphasis will be placed on patient safety and comfort while professional values, attitudes, and behaviors are upheld. (Sp) Prerequisite Courses: Minimum 2.5 in NDXT 200 and NDXT 201 and NDXT 202 Placement Score: None Co-requisite Courses: NDXT 130 and NDXT 200
NDXT221	EEG Clinical Practice II	3	This is the second course in a series of two clinical courses that provides the necessary supervised clinical education needed for the EEG student to competently perform routine procedures and recognize patient considerations that affect diagnosis. Emphasis will be placed on patient safety and comfort while professional values, attitudes, and behaviors are upheld. (Su) Prerequisite Course: Minimum 2.5 in NDXT 220 Placement Score: None Co-requisite Courses: NDXT 230 and NDXT 231 and NDXT 232
NDXT230	EEG Procedures & Pathology II	1	This course provides the EEG student with skills to recognize EEG patterns related to seizures. Students will discuss the International Classification of Seizures and Information. Topics will include seizure classification, treatment, and seizure protocols. (Su) Prerequisite Course: Minimum 2.5 in NDXT 200 Placement Score: None Co-requisite Courses: NDXT 221 and NDXT 231
NDXT231	EEG Procedures & Pathology III	1	This course provides EEG students with skills to recognize EEG patterns related to seizures. This course familiarizes EEG students with the common neurological disorders found on electroencephalogram. Students will discuss the signs and symptoms related to various neurological disorders. Topics will include EEG patterns, diagnostic procedures, and patient considerations. (Su) Prerequisite Course: Minimum 2.5 in NDXT 200 Placement Score: None Co-requisite Courses: NDXT 221 and NDXT 230
NDXT232	EEG Procedures & Pathology IV	1	This course familiarizes EEG students with the skills needed to perform procedures on neonates and pediatric patients. Students will discuss the special considerations needed working with neonates and pediatric patients. Topics will include EEG patterns specific to age group, physiological variables, and challenges of working in critical care departments. (Sp,Su) Prerequisite Course: Minimum 2.5 in NDXT 231 Placement Score: None Co-requisite Course: NDXT 221
NURS101	Nursing Directed Study	.25 to 3	This course is designed to update or enhance knowledge, skills, and competencies for: returning Nursing students, remediation, self-study, lecture/lab sessions, and/or supervised clinical. The course's foundation is based on the six Aims for Improvement of Quality Healthcare. A learning contract specifying objectives, activities and outcomes is required. (As Needed) Prerequisite Course: None. Program Approval is required. Placement Score: Determined by Section
NURS102	Nursing Directed Study	.25 to 3	This course is designed to update or enhance knowledge, skills, and competencies for: returning Nursing students, remediation, self-study, lecture/lab sessions, and/or supervised clinical. The course's foundation is based on the six Aims for Improvement of Quality Healthcare. A learning contract specifying objectives, activities and outcomes is required. (As Needed) Prerequisite Course: None. Department Approval is required. Placement Score: Determined by Section
NURS118	Special Topics in Nursing	.25 to 8	This course offers students the opportunity to practice and gain support for new nursing skills and knowledge. The foundation of this course is based on the six Aims for Improvement of Quality Healthcare. Specific up-to-date content will vary with each seminar and will be related to the nursing profession. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
NURS119	Special Topics in Nursing	.25 to 8	Nursing Special Topics offer students the opportunity to practice and gain support for new nursing skills and knowledge. The foundation of this course is based on the six Aims for Improvement of Quality Healthcare. Specific up-to-date content will vary with each seminar and will be related to the nursing profession. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
NURS200	Nursing Pharmacology	3	NURS 200 provides nursing students with fundamental knowledge of pharmacology and the implications for nursing including assessment, teaching, monitoring and dosage calculation for patients across the lifespan. The focus is on commonly-used drug classes and prototypes. (F,Sp,Su) Prerequisite Courses: Minimum 2.5 in BIOL 202 and (MATH 119 or higher or STAT 170 or STAT 215 or Math Level noted below) Placement Score: Math Level 6 Course Notes: All online sections of NURS 200: Testing is scheduled on Tuesdays & Wednesdays, 8:00 a.m. – 7:00 p.m. The mandatory, proctored testing dates are: 5/28-5/29, 6/11-6/12, 6/25-6/26, 7/9-7/10, 7/23-7/24, & 7/30-7/31. Testing may be done at LCC's Assessment Center. You may also request to test at an approved proctored location (additional fees may apply). Further information will be posted on the course D2L site on the first day of class. For additional information on proctored test sites, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NURS201	Patient-Centered Care	3	NURS 201 introduces students to a model of health care in which patients and their families are acknowledged and valued for their unique attributes. Concepts of development, family dynamics, and adaptation to stress are presented. (F, Sp, Su) Prerequisite Course: Minimum 2.5 in (MATH 119 or higher or STAT 170 or STAT 215) or concurrently or Math Level noted below Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 5
NURS210	Transition to Prof Nursing	6	The Transition Course introduces licensed paramedics, practical nurses, and respiratory therapists to the role of the professional nurse. The course builds on basic concepts to care for adult patients with common acute and chronic health problems. Clinical experiences will help students refine focused assessment and psychomotor skills in a variety of settings. (Su) Prerequisite Course: Minimum 3.0 in NURS 201 within 2 years of Nursing application. Admission to the Nursing Program is required. Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Course: NURS 212 Course Note: $661 of the course fee is for a medical kit and is non-refundable.
NURS211	Intro to Nursing Practice	8	Introduces the role of the nurse as a member of the healthcare team focusing on basic care concepts addressing human needs. Nursing process is presented as a framework for the provision of safe patient care. Clinical experiences facilitate the development of assessment and beginning psychomotor skills. (F, Sp) Prerequisite Course: None. Admission to the Nursing Program is required. Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Course: NURS 212 Course Note: $997 of the course fee is for a medical kit and is non-refundable.
NURS212	Concepts of Pharmacology	3	Provides nursing students with fundamental knowledge of pharmacology and the implications for nursing, including assessment, teaching, monitoring and dosage calculation for patients across the lifespan. The focus is on commonly-used drug classes and prototypes. (F,Sp) Prerequisite Course: None. Admission to the Nursing Program is required. Placement Scores: Reading Level 5 and Writing Level 6 Co-requisite Courses: NURS 210 or NURS 211
NURS221	Nursing Practice I	6	Builds on basic concepts to care for adult patients with common acute and chronic health problems. Clinical experiences will help students refine focused assessment skills and psychomotor skills. Students will practice in a variety of healthcare and community based settings. (F, Sp, Su) Prerequisite Course: None. Successful completion of Level I of the 2-Year or 2nd Degree Nursing program tracks is required. Placement Score: None Course Note: $114 of the course fee is for a medical kit and is non-refundable.
NURS222	Childbearing Families	4	Introduces concepts related to the child-bearing family. Emphasis is on health promotion, reproduction, sexual health, newborn assessment and care, and child growth and development. Clinical experiences promote the development of knowledge, skills, and attitudes to provide family-centered care in a variety of settings. (F, Sp, Su) Prerequisite Course: None. Successful completion of Level I of the 2-Year or 2nd Degree Nursing program tracks is required. Placement Score: None
NURS231	Nursing Practice II	6	Builds on complex acute and chronic health concepts to provide collaborative care for adults with multi-system, emergent, and complex mental health problems. Clinical experiences help students refine nursing judgment skills. Students practice in a variety of inpatient acute care and community settings. (F, Sp) Prerequisite Course: None. Successful completion of Level II of the 2-year or 2nd Degree Nursing Tracks is required. Placement Score: None Course Note: $255 of the course fee is for a medical kit and is non-refundable.
NURS232	Children and Their Families	4	Focuses on collaborative care for children with commonly occurring and complex health problems. Students will practice in a variety of health care and community-based settings and collaborate with the inter-professional health team to provide safe, family-centered care. (1, 4, 5) (F, Sp) Prerequisite Course: None. Successful completion of Level II of the 2-year or 2nd Degree Nursing Tracks is required. Placement Score: None
NURS241	Nursing Practice III	5	Synthesizes professional nursing concepts within a seminar format. Intensive clinical experience help students apply nursing judgment and practice leadership and management skills in collaboration with the inter-professional team. (F, Sp) Prerequisite Course: None. Successful completion of Level III of the 2-year or 2nd Degree or Advanced Standing Nursing Tracks is required. Placement Score: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
NURS242	Professional Practice	3	Focuses on the principles of leadership and management as they apply to coordination of care and the professional roles of the nurse. Examination of healthcare systems, legal regulations, and quality improvement will guide the student to apply delegation and supervision skills in their transition to practice. (F, Sp) Prerequisite Course: None. Successful completion of Level III of the 2-year or 2nd Degree or Advanced Standing Nursing Tracks is required. Placement Score: None
NURS280	Advanced Chronic Nursing Care	5	Students utilize the nursing process caring for adult clients adapting to chronic health problems; clients with immune system problems, hepatic failure, HIV, tuberculosis, diabetes mellitus, heart failure, and COPD. Clinical experiences include acute care/community facilities. The course's foundation is based on the six Aims for Improvement of Quality Healthcare. (F) Prerequisite: Successful completion of Level III of the 2-year or Advanced Standing to RN or 2nd Degree Accelerated Nursing Tracks or Level III-6th semester of the 3-year Nursing Track Course Note: $91 of the course fee is for a medical kit and is non-refundable.
NURS285	Advanced Acute Nursing Care	5	Students utilize the nursing process in caring for adults with critical health problems in acute care, with leadership and management opportunities including: homeostatic responses of the cardiovascular/respiratory systems, fluid-electrolyte shifts, acid-base imbalances, and advanced monitoring/patient assessment. The course's foundation is based on the six Aims for Improvement of Quality Healthcare. (F) Prerequisite: Successful completion of Level III of the 2-year or Advanced Standing to RN or 2nd Degree Accelerated Nursing Tracks or Level IV-7th semester of the 3-year Nursing Track Course Note: $91 of the course fee is for a medical kit and is non-refundable.
PARA200	Paramedic Directed Study	1 to 4	Provides selection of content from the Basic EMT or Paramedic curriculum to update or enhance current knowledge and skill for returning students and health care professionals. Through evaluation of previous learning, examinations, self study, and scheduling into needed lectures and labs students are advanced placed or readmitted into the Basic EMT or Paramedic program. (As Needed) Prerequisite Course: None. Program Approval required.
PARA221	Paramedic Medical Trauma I	4	This course provides information about the pre-hospital management of medical and traumatic conditions at the advanced life support level. Emphasis is placed on pathophysiology, recognition of signs and symptoms, review of basic life support management techniques, and strategies for advanced life support care. (F) Prerequisite Course: Minimum 2.5 in BIOL 145 or (BIOL 201 and BIOL 202). Admission to Paramedic Program is required. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Co-requisite Courses: PARA 231 and PARA 241 and PARA 251 and PARA 261
PARA221A	Paramedic Medical Trauma IA	2	This course, the first of two modules, provides information about the pre-hospital management of medical and traumatic conditions at the advanced life support level. Emphasis in this module is on the role and responsibilities of an advanced life support provider. (F,Sp,Su) Prerequisite Course: None. Admission to the Military Medic to Paramedic Program is required. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
PARA221B	Paramedic Medical Trauma IB	2	This course, the second of two modules, provides information about the pre-hospital management of medical and traumatic conditions at the advanced life support level. Emphasis in this module is on foundational topics for advanced practice of airway and IV therapy. (F,Sp,Su) Prerequisite Course: None. Admission to the Military Medic to Paramedic Program is required. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
PARA222	Paramedic Medical Trauma II	4	PARA222 incorporates previous knowledge gained at the basic EMT level and PARA221. Provides material for management of prehospital emergencies including assessment and management of neurological, behavioral, abdominal, metabolic, geriatric, and multiple trauma patients. The principles of triage, management of mass casualty incidents, and telecommunications are also included. (Sp) Prerequisite Course: Minimum 3.0 in PARA 221 Placement Score: None Co-requisite Courses: PARA 232 and PARA 242 and PARA 252 and PARA 262
PARA222A	Paramedic Medical Trauma IIA	1	The PARA222 modules incorporate previous knowledge gained at the basic EMT level and PARA221. This course, the first of three modules, provides material for management of pre-hospital emergencies as an advanced life support provider. Emphasis in this module is a review of anatomy/physiology, triage, stress management, and rescue operations. (F,Sp,Su) Prerequisite Course: None. Admission to Military Medic Program is required. Placement Score: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PARA222B	Paramedic Medical Trauma IIB	1	The PARA222 modules incorporate previous knowledge gained at the basic EMT level and PARA221. This course, the second of three modules, provides material for management of pre-hospital emergencies as an advanced life support provider. Emphasis in this module is on infectious disease, poisoning, and environmental emergencies. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 222A Placement Score: None
PARA222C	Paramedic Medical Trauma IIC	2	The PARA222 modules incorporate previous knowledge gained at the basic EMT level and PARA221. This last of three modules provides material for management of pre-hospital emergencies as an advanced life support provider. Emphasis in this module is on trauma care including soft tissue injuries and kinematics of trauma. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 222B Placement Score: None
PARA231	Paramedic Cardiology I	2.5	This course provides the paramedic student with information about cardiovascular anatomy, physiology, and electrophysiology. Emphasis is placed on rhythm interpretation, recognition of life threatening arrhythmias, electrical intervention and other prehospital patient management strategies. (F) Prerequisite Course: None. Admission to Paramedic Program is required. Placement Score: None Co-requisite Courses: PARA 221 and PARA 241 and PARA 251 and PARA 261
PARA231A	Paramedic Cardiology IA	1	This course provides the paramedic student with information about cardiovascular anatomy, physiology, and electrophysiology. Emphasis is placed on rhythm interpretation. (F,Sp,Su) Prerequisite Course: None. Admission to the Military Medic to Paramedic Program is required. Placement Score: None
PARA231B	Paramedic Cardiology IB	1.5	This course is a continuation of Cardiology IA. Emphasis is placed on rhythm interpretation, recognition of life threatening arrhythmias, electrical intervention and other prehospital patient management strategies. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 231A Placement Score: None
PARA232	Paramedic Cardiology II	2.5	Builds on information learned in PARA231 as a basis for more advanced arrhythmia interpretation. Management of cardiac arrest including medications, cardioversion, transcutaneous pacing, and defibrillation will be a major emphasis. Pacemakers, 12-lead ECG interpretation, and other advanced procedures, and arrhythmias will be presented. Application of theory, judgment, and decision-making strategies are evaluated. (Sp) Prerequisite Course: Minimum 3.0 in PARA 231 Placement Score: None Co-requisite Courses: PARA 222 and PARA 242 and PARA 252 and PARA 262
PARA232A	Paramedic Cardiology IIA	1	This module expands on information presented in PARA231 to cover more advanced arrhythmia interpretation. Management of cardiac arrest, including medications, cardioversion, transcutaneous pacing, and defibrillation will be a major emphasis. Pacemakers, 12-lead ECG interpretation, and other advanced procedures, and arrhythmias will be presented. Application of theory, judgment, and decision-making strategies are evaluated. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 231B Placement Score: None
PARA232B	Paramedic Cardiology IIB	1.5	This course is a continuation of Cardiology IIA, building on information learned in PARA231 as a basis for more advanced arrhythmia interpretation. Management of cardiac arrest including medications, cardioversion, transcutaneous pacing, and defibrillation will be a major emphasis. Pacemakers, 12-lead ECG interpretation, and other advanced procedures, and arrhythmias will be presented. Application of theory, judgment, and decision-making strategies are evaluated. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 232A Placement Score: None
PARA241	Paramedic Pharmacology I	2.5	Provides the student with information necessary for the preparation, calculation of doses, and administration of drugs used in the prehospital setting, including classification, action, use, and side effects. Information about other commonly prescribed drugs is also provided. (F) Prerequisite Course: None. Admission to Paramedic Program is required. Placement Score: None Co-requisite Courses: PARA 221 and PARA 231 and PARA 251 and PARA 261
PARA241A	Paramedic Pharmacology IA	1	One of two modules which provides the student with information necessary for the preparation, calculation of doses, and administration of drugs used in the prehospital setting, including classification, action, use, and side effects. This module focuses on core concepts including routes, calculations, equipment, and standards. (F,Sp,Su) Prerequisite Course: None. Admission to the Military Medic to Paramedic Program is required. Placement Score: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PARA241B	Paramedic Pharmacology IB	1.5	One of two modules which provides the student with information necessary for the preparation, calculation of doses, and administration of drugs used in the prehospital setting, including classification, action, use, and side effects. This module focuses on pharmacokinetics/pharmocodynamics of medications and integration into patient care. (F,Sp,Su) Prerequisite Course: None. Admission to the Military Medic to Paramedic Program is required. Placement Score: None
PARA242	Paramedic Pharmacology II	2.5	This course provides the paramedic student with additional in-depth information on Advanced Cardiac Life Support drugs including classification, action, use, and side effects. Information about other commonly used and prescribed drugs is also provided. (Sp) Prerequisite Course: Minimum 3.0 in PARA 241 Placement Score: None Co-requisite Courses: PARA 222 and PARA 232 and PARA 252 and PARA 262
PARA242A	Paramedic Pharmacology IIA	1	One of two modules that provides the paramedic student with additional in-depth information on Advanced Cardiac Life Support drugs including classification, action, use, and side effects. Focus of this module is linking medication with patient condition. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 241B Placement Score: None
PARA242B	Paramedic Pharmacology IIB	1.5	One of two modules that provides the paramedic student with additional in-depth information on Advanced Cardiac Life Support drugs including classification, action, use, and side effects. Focus of this module is developing management plans for patient care. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 242A Placement Score: None
PARA251	Paramedic Skills I	2.5	Provides introduction of paramedic skills required for advanced life support and provides the opportunity to apply theory to field practice in a discussion and skills lab setting. Skills will be demonstrated, practiced during supervised labs, and tested for competency. Students are also evaluated in the management of simulated emergencies. (F) Prerequisite Course: None. Admission to Paramedic Program is required. Placement Score: None Co-requisite Courses: PARA 221 and PARA 231 and PARA 241 and PARA 261 Course Note: $125 of the course fee is for a medical kit and is non-refundable.
PARA251A	Paramedic Skills IA	1	One of two modules which provides introduction of paramedic skills required for advanced life support and provides the opportunity to apply theory to field practice in a discussion and skills lab setting. Skills will be demonstrated, practiced during supervised labs, and tested for competency. Students are also evaluated in the management of simulated emergencies. Focus in this module is on basic life support skills review/testing/remediation, IV skills, and injections. (F,Sp,Su) Prerequisite Course: Admission to the Military Medic to Paramedic Program is required. Placement Score: None
PARA251B	Paramedic Skills IB	1.5	One of two modules which provides introduction of paramedic skills required for advanced life support and provides the opportunity to apply theory to field practice in a discussion and skills lab setting. Skills will be demonstrated, practiced during supervised labs, and tested for competency. Students are also evaluated in the management of simulated emergencies. Focus in this module is on advanced airway techniques, cardiac arrthymias monitoring, and simulations. (F,Sp,Su) Prerequisite Course: Admission to the Military Medic to Paramedic Program is required. Placement Score: None Course Note: $125 of the course fee is for a medical kit and is non-refundable.
PARA252	Paramedic Skills II	2.5	This course is a continuation of Skills I with the introduction of additional skills and continued application of theory. Measurement criteria for skills competencies becomes more stringent and students must become competent in all paramedic skills in preparation for the field internship component. Students are also evaluated in the management of simulated emergencies. (Sp) Prerequisite Course: Minimum 3.0 in PARA 251 Placement Score: None Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 262 Course Note: $125 of the course fee is for a medical kit and is non-refundable.
PARA252A	Paramedic Skills IIA	1	One of two modules which provide continuation of Skills I with the introduction of additional skills and continued application of theory. Measurement criteria for skills competencies becomes more stringent and students must become competent in all paramedic skills in preparation for the field internship component. Students are also evaluated in the management of simulated emergencies. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 251B Placement Score: None Course Note: $63 of the course fee is for a medical kit and is non-refundable.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PARA252B	Paramedic Skills IIB	1.5	This course is a continuation of Skills IIA. Measurement criteria for skills competencies becomes more stringent and students must become competent in all paramedic skills in preparation for the field internship component. Students are also evaluated in the management of simulated emergencies. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 252A Placement Score: None Course Note: $63 of the course fee is for a medical kit and is non-refundable.
PARA261	Paramedic Clinical I	3	This course provides clinical experience for paramedic students in areas including nursing home; hospital units such as the emergency department, critical care units, obstetrics, pediatrics, and psychiatric units; and designated EMS agencies under the supervision of licensed paramedics. (F) Prerequisite Course: None. Admission to Paramedic Program is required. Placement Score: None Co-requisite Courses: PARA 221 and PARA 231 and PARA 241 and PARA 251
PARA262	Paramedic Clinical II	3	This course provides clinical experience for paramedic students in areas including hospital units such as emergency departments, critical care units, obstetrics, pediatrics, surgery, and designated EMS agencies under the supervision of licensed paramedics. (Sp) Prerequisite Course: Minimum 3.0 in PARA 261 Placement Score: None Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 252
PARA262A	Paramedic Clinical IIA	1	This course provides clinical experience for paramedic students in areas including hospital units such as emergency departments, and designated EMS agencies under the supervision of licensed paramedics. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 261C Placement Score: None
PARA262B	Paramedic Clinical IIB	1	This course provides clinical experience for paramedic students in areas including hospital units such as critical care units, surgery, and designated EMS agencies under the supervision of licensed paramedics. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 262A Placement Score: None
PARA262C	Paramedic Clinical IIC	1	This course provides clinical experience for paramedic students in areas including hospital units such as obstetrics, pediatrics, and designated EMS agencies under the supervision of licensed paramedics. (F,Sp,Su) Prerequisite Course: Minimum 3.0 in PARA 262B Placement Score: None
PARA263	Paramedic Internship	4	This course provides a field internship component with an advanced life support agency. Students are assigned to a paramedic training officer to provide total patient care and other professional duties under direct supervision with continuous evaluation of the student's progress. Oversight is provided by the program clinical coordinator and program director. (Su) Prerequisite Course: Minimum 3.0 in PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 262 Placement Score: None
PFFT100	Total Fitness A-Fitness	2	Total Fitness A encompasses fitness, nutrition, health, exercise and cognition, and wellness principles, with emphasis on physical fitness, including cardiovascular fitness, strength, and flexibility. Students will complete an assessment measuring aerobic fitness, strength, and flexibility. With instructor supervision, students will develop and participate in a personal exercise plan. Course features flexibility of attendance. (F,Sp,Su) Prerequisite Course: None Placement Score: None Course Note: May attend downtown or west campus facility. Cannot be taken during the same semester with PFFT 101, PFFT 102, PFFT 104 or PFFT 109.
PFFT101	Total Fitness B-Nutrition	2	Total Fitness B encompasses fitness, health, exercise and cognition, and wellness principles with emphasis on nutrition and healthy eating choices. Students will complete a physical fitness assessment and develop and participate in a personal exercise plan. A food journal and healthy meal planning will be included. The course features flexibility of attendance. (F,Sp,Su) Prerequisite Course: None Placement Score: None Course Note: May attend downtown or west campus facility. Cannot be taken during the same semester with PFFT 100, PFFT 102, PFFT 104 or PFFT 109.
PFFT102	Total Fitness C-Weight Control	2	Total Fitness C encompasses fitness, health, exercise and cognition, and wellness principles with an emphasis on weight management: loss, gain or maintenance. Students will complete a physical fitness assessment. Students will develop and participate in a personal exercise plan. Daily food journal will be included. The course features flexibility of attendance. (F,Sp,Su) Prerequisite Course: None Placement Score: None Course Note: May attend downtown or west campus facility. Cannot be taken during the same semester with PFFT 100, PFFT 101, PFFT 104 or PFFT 109.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PFFT103	Total Fitness D-Life Fitness	2	Total Fitness D encompasses fitness, health, exercise and cognition, and wellness principles with emphasis on lifelong fitness. Students will complete a physical fitness assessment and will develop a personal exercise plan. Students will choose and participate in fitness and recreational activities in the community. The course features flexibility of attendance. (F,Sp,Su) Prerequisite Course: None Placement Score: None Course Note: May attend downtown or west campus facility. Cannot be taken during the same semester with PFFT 100, PFFT 101, PFFT 102 or PFFT 109.
PFFT104	Therapeutic Massage Fitnes Lab	1	This course is designed for students in the Therapeutic Massage Program. The emphasis is on general fitness (cardiovascular, flexibility, muscle strength and endurance), as well as specific exercises related to massage therapy skills. General wellness principles are addressed during this course. (F,Sp) Prerequisite Course: None. Program Approval is required. Placement Score: None Course Note: This course is for students in the Therapeutic Massage Program. Students may attend downtown or west campus facility. Cannot be taken during the same semester with PFFT 100, PFFT 101, PFFT 102 or PFFT 109.
PFFT109	Introduction to Fitness	1	Introduction to Fitness is designed to introduce general fitness and wellness concepts to students. With supervision of an instructor, students will develop and participate in exercise plans tailored to their individual needs. This course features flexibility of attendance and modular teaching. (F,Sp,Su) Prerequisite Course: None Placement Score: None Course Note: May attend downtown or west campus facility. Cannot be taken during the same semester with PFFT 100, PFFT 101, PFFT 102 or PFFT 104.
PFFT111	Aerobic Boxing	1	This course will teach the art of self-defense while improving your aerobic and anaerobic capacity. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT113	Core Strength & Flexiblty Trng	1	This course combines core training and flexibility exercises. Students will use calisthenics and floor exercises to improve muscle strength, increase flexibility, and develop core strength (back and abdominal muscles). Proper flexibility techniques and exercises will be emphasized. Students will experience a total body workout utilizing all major muscle groups. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT114	Advanced Circuit Training	2	This course is designed for Law Enforcement students to incorporate strength conditioning, muscle endurance, flexibility, exercise and cognition, and cardiovascular training for a total body workout. This can be accomplished in a relatively short time frame by utilizing the circuit training method. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT119	Fire Academy Fitness Training	3	This course provides Fire Academy students with techniques and practice to improve and maintain a high degree of physical fitness necessary to meet the demands of their profession. (F,Sp) Prerequisite Course: None. Admission to Fire Academy is required. Placement Score: None Co-requisite Courses: FIRE 101 and FIRE 102
PFFT120	Aerobic Exercise	2	This course helps students to improve cardiovascular function and oxygen efficiency to enhance muscle structure and function through toning exercises, aerobic dancing, and stretching. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT122	Step Aerobics	2	This course helps students improve cardiovascular efficiency through the use of step platforms. Movement combinations with increasing complexity will be used to increase student's balance and coordination. Toning and stretching exercises will be used to complete muscle balancing and flexibility. Educational material will be distributed to increase student's knowledge of fitness and wellness to improve personal quality of life. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT136	Dance Exercise	1	This course includes warm-ups and exercise from various dance genres including ballet, modern, jazz, urban line, and country line, designed to develop flexibility, strength, and coordination. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT147	Basketball Fitness Training	2	This course is not a traditional basketball class. Participants will be in a workout class that will have an emphasis on conditioning using basketball drills and basketballs. Class activities will include running, continuous movement, shooting, defensive slides, and dribbling. (F,Sp) Prerequisite Course: None Placement Score: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PFFT170	Yoga: Beginning	1	This course is an introduction to yogic breathing and yogic stretching exercises with emphasis on relaxation and meditation. Yoga postures will be utilized to reduce stress and tension. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFFT171	Yoga: Continuing	1	This course promotes psycho-physical integration of body and mind through yogic breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation. (F,Sp,Su) Prerequisite Course: None Placement Score: None Recommended: PFFT 170
PFFT180	Seminar: Special Subjects	0 to 6	Seminars are designed to meet specific community needs. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
PFFT181	Lineworker Fitness A	1	This course combines weight machines, core training, interval training and flexibility training to increase overall fitness for pole climbing. Proper technique will be emphasized to ensure safety and continued progress. There will be initial fitness testing and students will be responsible for tracking their progress. (Su) Prerequisite Course: None. Program Approval required for Acceptance into the Electrical Utility/Lineworker Curriculum. Placement Scores: Reading Level 3 and Writing Level 2
PFFT182	Lineworker Fitness B	1	Students will establish and/or build upon foundational fitness levels tested at the beginning of the course and begin to transition to obtaining more muscular and cardiovascular endurance. The class will also introduce basic knowledge of nutrition and the importance of hydration. (F) Prerequisite Course: Minimum 3.0 in PFFT 181 or 2 minutes or better on LPAT score. Placement Scores: Reading Level 3 and Writing Level 2
PFFT183	Lineworker Fitness C	2	Students will continue to work on increasing muscular and cardiovascular endurance. Students will be expected to improve on all fitness levels tested at the beginning of the course and perform an advanced cardiovascular endurance test on Jacobs Ladder. This course will prepare students for the 10 week climbing school. (Sp) Prerequisite Course: None Placement Scores: Reading Level 3 and Writing Level 2 Recommended: Minimum 3.0 in PFFT 182
PFHW100	Health and Wellness Seminar	.5 to 4	This course introduces the student to 8 hours of various topics related to health awareness, wellness, and/or prevention of lifestyle-related illness. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
PFHW105	Medical Altern for Hlth & Wlns	2	This course discusses alternatives in maintaining health and correcting illness. The students will examine the six major medical systems, as well as many alternative therapies from around the world. (F,Sp) Prerequisite Course: None Placement Score: Reading Level 5 and Writing Level 6
PFHW120	Health and Wellness for Police	0.5	This course introduces the student to health-related topics, including physical fitness, nutrition, stress management, and the prevention of lifestyle-related illness. (Fa, Sp) Prerequisite Course: None. Admission to the Mid-Michigan Police Academy is required. Placement Score: None
PFHW123	Human Nutrition	3	An introductory course in human nutrition. Topics include digestion, absorption, metabolism, and biological functions of nutrients; nutrition needs throughout the life cycle; relationship of nutrition and eating patterns to health and disease; individual and societal influences on food choices; and the role of government in food safety and security. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: BIOL 145 or equivalent Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
PFHW163	Healthy Lifestyles	2	This course introduces the student to lifestyle skills that lead to better health. The student will learn healthy nutritional habits, basic fitness concepts, positive stress reduction, and development of a personalized healthy lifestyle plan. Assessment skills and wellness concepts will be put into practice. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PFHW181	Stress Management	1	This course helps students understand the basic components of the stress response and how they limit our physical, mental and emotional well-being. Students learn and apply basic principles that help to resolve stressful situations and lead to greater sense of ease and pleasure in life, work and relationships. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services.
PFKN105	Psychology of Coaching	1	This course provides a comprehensive introduction to the art and science of coaching, as well as an introduction to the art of positive coaching philosophy. (F) Prerequisite Course: None Placement Scores: Reading Level 4 and Writing Level 4
PFKN106	Group Fitness Instructor Prep	3	This course prepares students to take a national Group Fitness Instructor certification exam. Students will learn how to safely instruct a variety of fitness classes and how to modify exercises for special populations. Human anatomy, exercise physiology, class design, cueing, injury prevention, and safe exercise techniques will be covered. (Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 4
PFKN170	Foundations of Kinesiology	3	This course examines multiple aspects of the Kinesiology discipline and profession. This course reviews concepts in each major discipline and theoretical concepts of kinesiology as it impacts professional careers, research, and lifestyle. Current issues and historical perspectives related to the field will be presented. Kinesiology career preparation will be discussed. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: BIOL 145 or equivalent Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
PFKN200	Exercise Physiology	3	This course is designed to acquaint the student with physiological principles of training, exercise prescription, and the role of physical activity in health and disease. Both acute and chronic effects of exercise on various body systems will be discussed. (Sp) Prerequisite Course: Minimum 2.0 in (BIOL 145 or (BIOL 201 and BIOL 202) or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3
PFKN201	Exercise Physiology Lab	1	This course will explore theory and practices related to exercise testing and prescription. It will include practical experience in body composition techniques, muscle strength and endurance testing, flexibility testing and cardiovascular endurance testing. The results of the testing will be used to form appropriate exercise prescriptions according to the American College of Sports Medicine guidelines.(Sp) Prerequisite Courses: Minimum 2.0 in (BIOL 145 or (BIOL 201 and BIOL 202)) and (PFKN 200 or concurrently) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
PFKN205	Sport & Exercise Psychology	3	This course will provide an overview of concepts and applied principles of sport and exercise psychology. Emphasis will be placed on the effect of psychological factors on performance and participation in sport and exercise settings, and the effect of participation in sport and exercise on personal growth and development. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6
PFKN208	Biomechanics	3	This course introduces students to the mechanical and anatomical principles that govern human motion. The student will understand the link between the structure of the human body and its function, especially as it applies to movement in exercise and sport. (F) Prerequisite Courses: Minimum 2.0 in BIOL 145 or (BIOL 201 and BIOL 202) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
PFKN210	Athletic Training Principles	3	This course is an overview of prevention, management, and rehabilitation as each relates to athletic injury. It also provides an examination of various techniques used for the assessment, treatments, and rehabilitation of athletic injuries. Other topics include legal implications for the athletic trainer, first aid principles, and taping procedures. (Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: Biology
PFKN250	Measurements in Kinesiology	3	This is an introductory course which examines materials and methods used for assessment and analysis within Kinesiology. Emphasis will be placed on procedures and tools used within the various sub-disciplines. Measurement and evaluation methods will address motor skills, physical fitness, and psychological components associated with physical fitness. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3 Recommended: PFKN 170

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PFKN260	Growth and Motor Behavior	3	This is a fundamental course which investigates the relationship between biological maturation and physical growth as it relates to motor performance and motor skills learning. The course will also cover fundamentals of motor learning, stages of skill acquisition, physical fitness, and motor abilities of children and youth. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: BIOL 145 or equivalent
PFKN265	Exercise-Diverse Populations	3	This course presents information related to exercise for diverse populations in the worksite, clinical, and health/fitness settings. Populations studied include: youth, elderly, pregnant, obese, pulmonary and vascular disease patients. Musculoskeletal, cognitive, psychological, and sensory disorders will also be covered. Health assessments, exercise evaluations, and exercise prescription will be analyzed. (F) Prerequisite Course: Minimum 2.0 in BIOL 145 or (BIOL 201 and BIOL 202) Placement Scores: Reading Level 5 and Writing Level 6
PFKN270	Personal Trainer Preparation	4	This Personal Trainer Certification preparatory course provides students with the theoretical and practical skills required to take a national certification exam in order to enter the profession of personal training. Focal topics include basic human anatomy, exercise physiology, nutrition, exercise programming, client assessment, injury prevention, legal issues, and business management. (F) Prerequisites Courses: Minimum 2.0 in BIOL 145 or (BIOL 201 and BIOL 202) Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4 Recommended: BIOL 201 and BIOL 202 for Kinesiology majors; BIOL 145 for non-Kinesiology majors
PFKN280	Kinesiology Internship	3	This course provides students the opportunity to apply acquired academic knowledge and practical skills in a Kinesiology related worksite location. A minimum of 108 worksite hours are required. In addition, lecture topics will include workplace etiquette, professionalism, mentorship, diversity, time management, ethical and legal issues.(F,Sp,Su) Prerequisite Course: None. Program Approval required for worksite location and intern prerequisites and responsibilities. Placement Scores: Reading Level 5 and Writing Level 6
PFKN295	Ind Study in Physical Fitness	.5 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFWT112	Intro to Weight Training	1	This basic resistance (weight) training course is designed to introduce resistance training and proper lifting techniques to students. Safety rules, proper use of equipment, and concepts of lifting will be emphasized. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFWT123	Weight Training I	2	This course is designed to promote physical fitness through progressive resistance (weight) training. Instruction will include principles, methods and techniques of resistance training. Using this material, students will design their own program with emphasis on muscle strengthening, muscle endurance and weight reduction. Principles of proper body mechanics will be applied. (F,Sp,Su) Prerequisite Course: None Placement Score: None
PFWT124	Weight Training II	2	This course expands students' knowledge of progressive resistance (weight) training, (using both free weights and machines), thus increasing the variety and methods of training techniques. Students will monitor their food intake throughout the semester, further developing an understanding of the impact of appropriate dietary habits on resistance training. (F,Sp,Su) Prerequisite Course: None Placement Score: None Recommended: PFWT 112 or PFWT 123
PHIL101	Introduction to Philosophy	3	A survey introduction to the central topics, theories, and arguments from a range of philosophical traditions. Topics may include: theory of knowledge, the nature of truth and reality, science and technology, free will, the existence of god, the nature of consciousness, personal identity, moral responsibility, and the nature of justice. (F,Sp) Prerequisite Course: None Placement Scores: (Reading Level 5 and Writing Level 6) or (NCSS 101 or ENGL 098 or ENGL 099 or concurrently)
PHIL151	Intro to Logic & Critcal Think	4	Introduction to both informal and basic formal logic, including both deductive and inductive logic, validity (both formal and informal), soundness, informal fallacies, and an analysis of the pragmatic functions of language within argumentative speech and writing. (F,Sp,Su) Prerequisite Course: None Placement Score: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PHIL152	Introduction to Ethics	4	Introduction to ethics, including an introduction to and evaluation of central normative ethical traditions, an introduction to basic metaethics, and a consideration of different areas of applied ethics. The course will include a consideration of cross-cultural material, when appropriate. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6
PHIL153	Knowledge and Reality	4	Select issues from classical and contemporary philosophy provide an introduction to differences between knowledge and opinion, ways of supporting knowledge claims, and the relationship between the knower and what exists. (F,Sp, Su) Prerequisite: Reading Level 5 and Writing Level 6
PHIL211	Philosophy: Ancient & Medieval	4	Surveys major developments in theories of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers Chinese, Indian, Greek, Roman, Christian, Islamic, and European thought from mythic beginnings to the period of early scientific reasoning. (F,Sp, Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PHIL212	Philosophy: Modern & Contempry	4	Surveys major developments in theories of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers European, Asian, African, Native American, and American pragmatic thought from the scientific revolution to the present. (F,Sp) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: ENGL 121 or ENGL 131. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PHIL260	Contemporary Ethical Problems	4	This is an advanced course designed to examine contemporary moral issues which arise through technological and social developments. It will explore the limits of traditional ethical theories and/or their possible adaptation to a changing world. Where appropriate, course includes issues of cross-cultural importance which involve multinational concerns. (F,Sp) Prerequisite: Reading Level 5 and Writing Level 6
PHIL265	Ethical Issues in Medicine	3	This course will present some of the ethical dilemmas which arise in relation to health care and develop a framework for ethical decision-making with which to deal with these and other related problems. It is designed for both health care professionals and others who are interested in these issues. (F,Sp) Prerequisite: None Course Note: Formerly HUMS 265
PHIL295	Ind Study in Philosophy	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
PHOT101	Basic Photo for Non-Majors	2	Students will learn to use camera controls, photographic composition, and lighting to make better photographs. Digital capture (the student's own computer will be used). Designed for students with little or no previous still photography experience who do not plan to major in imaging technology.(F,Sp,Su) Prerequisite Course: None Placement Scores: None Course Note: A digital camera is required.
PHOT111	Digital Photography I	3	An introduction to photographic technology on both a theoretical and practical level. The student will learn camera types and related equipment, exposure controls, creative controls, and beginning and intermediate digital darkroom skills including correcting and enhancing digital images and preparing files for output on printing devices using image editing. This course is the introductory course in the Photographic Imaging Technology Program.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: This course is the first course in the Photography Degree sequence and also may be taken for personal interest. A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus. To finish an Associate's Degree or Certificate in Photography in the shortest possible time, you must enroll in PHOT 111, PHOT 112, PHOT 113, and ARTS 102 in your first semester.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PHOT112	Digital Imag for Photographers	4	An introduction to the capture, processing and manipulation of digital photographic images using image editing software. Students will learn to scan, capture, correct and enhance digital images and prepare files for output on black and white and color printing devices. Introduces students to theories, terminology, and applications of digital imaging technologies. (F,Sp) Prerequisite Courses: Minimum 2.0 in PHOT 111 or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.
PHOT113	Lighting Concepts and Applic	3	Introduces the student to the fundamental concepts of photographic lighting for image capture in the studio and on location. Students will learn to apply their knowledge by identifying and solving common photographic lighting problems. Students will use professional continuous lighting equipment to produce images. (F,Sp) Prerequisite Course: Minimum 2.0 in PHOT 111 or concurrently Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.
PHOT114	Advanced Photographic Imaging	4	An advanced level study in the capture, processing and manipulation of digital photographic images using image editing software. Students will be introduced to contemporary color photographic imaging processes and materials. Learners will apply color management and color image design principles in the production of professional-level color photographic images. (F,Sp) Prerequisite: Minimum 2.0 in (ARTS 102 and PHOT 111 and PHOT 112 and PHOT 113) and Reading Level 5 and Writing Level 6 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.
PHOT117	Digital Photography II	4	Students will learn intermediate and advanced digital imaging exposure, image processing, and output controls and techniques. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Students will learn black and white inkjet printing techniques. (F,Sp) Prerequisite: Minimum 2.0 in (PHOT 111 and PHOT 112) and Reading Level 3 and Writing Level 2 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.
PHOT118	Visual Literacy	2	An introduction to the basic theories of visual communication and how photographic images are and have historically been used as a language to disseminate information. Learners will explore the history and contemporary use of the photographic image and will create work in the style of a particular period or photographer. (Sp) Prerequisite: Minimum 2.0 in (ARTS 102 and PHOT 111 and PHOT 112 and PHOT 113) and Reading Level 3 and Writing Level 6 and Math Level 3
PHOT119	Intermediate Lighting	3	An exploration of intermediate lighting theories, practices and techniques. This course emphasizes the use and control of natural light and electronic flash as applied to people, locations and advanced studio settings. (F,Sp) Prerequisite: Minimum 2.0 in (PHOT 111 and PHOT 113) and Reading Level 3 and Writing Level 6 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.
PHOT191	Photo Imaging Special Topics	1 to 3	Photo Imaging Special Topics will be offered for intermediate and advanced photographic students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F,Sp,Su) Prerequisite Courses: Determined by Section Placement Scores: Determined by Section
PHOT212	Commercial Illustration Photo	3	Students will learn the technical requirements to produce professional photographic illustrations and will use appropriate tools and techniques to produce professional photographic illustrations. Student will be introduced to appropriate medium format technologies as applied to professional photographic illustration. (F) Prerequisite Courses: Minimum 2.0 in PHOT 114 and PHOT 117 and PHOT 119 and minimum 2.0 in PHOT 215 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3
PHOT213	Portrait Photography	3	Introduces students to the techniques and technologies associated with professional portrait photography. Students will work in areas directly linked to the technical and expressive elements of portrait photography including proper lighting techniques and digital retouching methods. (F) Prerequisite Courses: Minimum 2.0 in PHOT 114 and PHOT 117 and PHOT 119 and minimum 2.0 in PHOT 215 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.
PHOT214	Photojournalism	2	This course introduces students to techniques and practices of photojournalism, documentary photography, public relations photography, and emerging media. (F) Prerequisite Courses: Minimum 2.0 in PHOT 114 and PHOT 117 and PHOT 119 and minimum 2.0 in PHOT 215 or concurrently Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3 Course Note: A manually-adjustable Digital SLR/or mirrorless camera is required. See official syllabus.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PHOT215	Digital Color Management/Print	2	Students will apply color management, color correction, image enhancement techniques, and digital lab efficiency to professionally prepare their photographic images. Students will also produce professionally acceptable prints using digital color output devices, processes, and materials.(F,Sp) Prerequisite Courses: Minimum 2.0 in PHOT 114 and PHOT 117 Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 3
PHOT228	Independent Study	1 to 3	Students will apply critical thinking processes and digital photographic imaging technologies to produce a body of work illustrating their area(s) of special interest. (F,Sp,Su) Prerequisite: Minimum 2.0 in PHOT 117 and Approved Proposal and Reading Level 3 and Writing Level 2 and Math Level 3
PHOT232	Internship	3	This course allows advanced students to work as intern developing competencies in the technical, business, creative, and communicative aspects of photography and digital imaging. An acceptable application and internship agreement is required prior to registration.(F,Sp,Su) Prerequisite Course: Minimum 2.0 in PHOT 117 and Approved Internship Agreement and Department Approval Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 3
PHOT270	Busn Issues for Photography	3	This course exposes the student to the general business practices and approaches used in the photographic marketplace including small business management, copyright, marketing and legal issues. (Sp) Prerequisite: Minimum 2.0 in (PHOT 113 and PHOT 114 and PHOT 117) and Reading Level 5 and Writing Level 6 and Math Level 3
PHOT280	Advanced Projects	3	Students will apply critical thinking processes and digital photographic imaging technologies to produce a body of work illustrating their area(s) of special interest. (Sp) Prerequisite: Minimum 2.0 in (PHOT 212 and PHOT 213 and PHOT 214 and PHOT 215) and (PHOT 290 concurrently) and Reading Level 5 and Writing Level 6 and Math Level 3 Course Note: A manually-adjustable Digital SLR camera is required. See official syllabus.
PHOT290	Porfolio Assembly	2	This is a concluding course for the Photographic Imaging Technology program associate degree. This course finalizes the student's portfolio and immediate career plans. Students edit and assemble their best work into a cohesive, visual resume in order to secure employment or gain admission to another institution for continued studies. (Sp) Prerequisite: Minimum 2.0 in (PHOT 212 and PHOT 213 and PHOT 214 and PHOT 215) and (minimum 2.0 in PHOT 270 or concurrently) and (PHOT 280 concurrently) and Reading Level 5 and Writing Level 6 and Math Level 3
PHYS120	The Art of Physics	4	This course reveals the wonders of the physical universe by giving students a basic understanding of motion, forces, acoustics and optics. Designed for students in the Humanities; Art, Design & Multimedia; other non-science areas, or sonography. Extensive hands-on activities and laboratory exercises supplement the lecture. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (MATH 105 or MATH 106) or Math Level indicated below. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
PHYS200	Intro to Applied Physics	4	The basic principles of force, work, rate, resistance, energy, and power are applied to four systems: mechanical, fluid (liquids and gases), electrical, and thermal systems using unifying concepts through mathematical expressions. Activities and experiments explore physics behind real-world applications. (F,Sp) Prerequisite Course: Minimum 2.0 in (MATH 105 or MATH 106) or Math Level indicated below. Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 4
PHYS221	Introductory Physics I	4	First semester of algebra-based physics with laboratory, designed to present the fundamental principles of physics, with applications. Topics in mechanics include one and two dimensional kinematics, forces, energy and work, momentum and impulse, circular motion and rotational dynamics, conservation laws, elasticity and simple harmonic motion. Experiments and hands-on activities are integrated with lecture topics. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 122 or MATH 126 or MATH 141) or Math Level 9 noted below Placement Scores: Reading Level 5 and Writing Level 6 and Math Level 9
PHYS222	Introductory Physics II	4	Second semester continuation of algebra-based physics with laboratory, designed to present the fundamental principles of physics, with applications. Topics include electricity and magnetism, simple harmonic motion, waves, sound, light, geometric and physical optics. Experiments and hands-on activities are integrated with lecture topics. (F,Sp) Prerequisite Courses: Minimum 2.0 in PHYS 221 or Department Approval Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PHYS251	Physics I with Calculus	5	First in a two-semester sequence of calculus-based physics with laboratory for science and engineering students. Topics include forces and motion, momentum, work and energy, conservation laws of energy and momentum, rotational motion, static equilibrium, gravitation, and oscillations. May include relativity. Experiments and hands-on activities are integrated with lecture topics. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 152 or MATH 162) or concurrently Placement Scores: Reading Level 5 and Writing Level 6
PHYS252	Physics II with Calculus	5	Second in a two-semester sequence of calculus-based physics with laboratory for science and engineering students. Topics include electric and magnetic forces and fields, electromagnetic energy, currents and circuits, electromagnetic oscillations and waves, mechanical waves and sound, light waves, physical and geometrical optics. Experiments and hands-on activities are integrated with lecture topics.(F,Sp,Su) Prerequisite Courses: Minimum 2.0 in PHYS 251 and Minimum 2.0 in (MATH 152 or MATH 162) Placement Scores: Reading Level 5 and Writing Level 6
PHYS260	Statics for Engineers	3	This course will place emphasis on the understanding of principles through the solution of problems in analysis of vectors, torques, trusses, resultants, machines, force systems, centroids and center gravity, equilibrium and friction. (F,Sp) Prerequisite: Minimum 2.0 in PHYS 251.
POLS120	American Political System	4	An analysis of the American political system, emphasizing the federal system and government at the national level. This course studies national governmental institutions' activities, functions and methods of organizing resources and making policy. Emphasis is on political participation by an informed public. (F,Sp,Su) Prerequisite Course(s): None. Placement Score(s): Reading Level 5. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
POLS121	State and Local Government	4	An overview of state and local government in the United States with an emphasis on the Michigan government. Study is focused on state and local governmental institutions' activities, functions, resource management and policymaking. Consideration is given to relationships between federal, state and local governments, the issues they confront, and public participation. (F,Sp,Su) Prerequisite Course: None Placement Score: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
POLS201	Intro to Political Science	3	This course is an introduction to the study of politics and the academic fields of Political Science. It examines the fundamental nature of politics, the exercise of power and their implications. Students will explore the need for governance, role of power, place of individuals in society and political institutions.(F,Sp, Su) Prerequisite Course: None Placement Score: Reading Level 5
POLS205	Government Internship	3	This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and township through the federal level. (Sp) Prerequisite: Reading Level 5 Course Note: After you have registered, complete the online application at https://www.lcc.edu/ssh/politicalscience/ and bring a copy to the first day of class.
POLS240	Introduction to Public Policy	3	This course will provide an analysis of political and organizational processes which influence the formulation and implementation of public policy. Special attention will be given to the formulation, implementation, and evaluation of various selected public policies. Further, the course is intended to develop some skills for the evaluation and design of policies. (Sp) Prerequisite: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
POLS250	Campaigns & Elections	3	Emphasizes origins, structure, and functions of US and Michigan political parties. Examines the election process and factors influencing election results. Emphasis is placed on the importance of organizing effective political action and citizen participation, and the role of interest groups in American and Michigan politics. (F) Prerequisite: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
POLS260	Comparative Political Systems	3	An introduction to the institutions, processes, and policies of political systems throughout the world. The course will compare political cultures and behavior in the United States, the industrial nations of Europe and Asia, and the developing nations, with special emphasis on the themes of democracy, participation, and political change. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
POLS270	International Relations	3	A course in contemporary international relations, with emphasis on the effect political cultures in different countries have on the international system. Concepts, theories, and rudimentary methods of comparison and analysis are surveyed. The relationship between international politics and U.S. foreign and domestic policy is explored. (F) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6
POLS295	Ind Study in Political Science	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
PSYC175	Psyc of Death: Prep for Living	3	Examines psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include cross-cultural and historical perspectives, health care systems, medical ethics, grief/loss issues, funerals and body disposition, legal and social issues, death in modern society, suicide and beliefs about life after death. (Sp) Prerequisite: Reading Level 5
PSYC180	Intro to Positive Psychology	3	Examines psychological theories, concepts and research that pertain to the study of positive psychology. Topics include the empirical study of well-being, happiness, love, optimism, hope, the concept of "flow," courage, interpersonal skills, perseverance and morality. Research methods, studies, and findings will be critically analyzed.(F, Sp) Prerequisite Course: None Placement Score: Reading Level 5 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC200	Introduction to Psychology	4	The basic orientation to the field of psychology, designed as a general survey and as preparation for advanced courses in the field. Topics include methods, nervous systems, intelligence, development, learning, memory, personality, abnormality, therapy, and social behavior.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC202	Psychology of Personality	3	A survey of the leading theories of personality and personality development. Topics include Freudian/psychodynamic, trait, behavioral, humanistic, and Yoga/Buddhist theories, assessment of personality, and major personality theorists.(F,Sp,Su) Prerequisite Course: Minimum 2.0 in PSYC 200 Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC203	Social Psychology	3	A theoretical and empirical approach to understanding individual social and group behavior. Examines the person and the social environment with a focus on attitudes, attributions, interpersonal and intrapersonal behavior, and group processes.(F,Sp,Su) Prerequisite Courses: Minimum 2.0 in (PSYC 200 or SOCL 120) Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC205	Human Growth and Development	3	A study of the human life cycle from conception to death. Designed to investigate, describe, and explain changes in the physical, social, emotional, and cognitive areas that are a result of the continuous interaction of maturation and experience.(F,Sp,Su) Prerequisite Course: Minimum 2.0 in PSYC 200 Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
PSYC209	Cognitive Psychology	3	Cognitive psychology is the study of the human mind; its domain includes questions concerning how people perceive the world, remember information, use knowledge, understand language, learn, reason, and solve problems. (F) Prerequisite Courses: Minimum 2.0 in PSYC 200 Placement Scores: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in ENGL 121 or ENGL 131.
PSYC210	Brain and Behavior	3	Brain and Behavior integrates psychology and biology, emphasizing how the nervous system controls behavior. The course provides an examination of the structure and function of the nervous system and the neurobiological bases of mental illness, drug abuse, movement, sleep, memory, feeding and drinking, sensory processing, and neurological disorders. (Sp) Prerequisite: Minimum 2.0 in (PSYC 200 or BIOL 121 or BIOL 127) and Reading Level 5 Recommended: Writing Level 6 or (Minimum 2.0 in ENGL 121 or ENGL 131).
PSYC221	Child Psychology	3	Explores theories and principles of child cognitive and physical development from conception to puberty. The course covers psychological, sociological, and biological aspects of maturation and development. Topics include issues such as moral development, social development, language development, and cultural and cross cultural influences on the developing child.(F,Sp,Su) Prerequisite Course: Minimum 2.0 in PSYC 200 Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC222	Adolescent Psychology	3	Examines theoretical and empirical literature related to adolescence, emphasizing biological, psychological, and sociological aspects of maturation and development from puberty to young adulthood. Topics include the adolescent's search for identity; influences of culture, family, school and peer group; and problems and pathologies in adolescence. (Sp) Prerequisite: Minimum 2.0 in PSYC 200 and Reading Level 5 Recommended: Writing Level 6 or (Minimum 2.0 in ENGL 121 or ENGL 131). Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC240	Psychology of Human Sexuality	3	An exploration of psychological aspects of human sexuality, including research methods, response, identity, development, attraction and intimacy, communication, orientation, attitudes, diseases, and disorders. (Sp) Prerequisite: Reading Level 5
PSYC250	Abnormal Psychology	3	A survey of the nature, development, diagnosis, and treatment of psychopathology viewed from a general-systems perspective (psychological, sociological, and biological). Major theories of causes, scientific research, and diagnostic and therapeutic techniques are studied with respect to various psychological disorders.(F,Sp,Su) Prerequisite Course: Minimum 2.0 in PSYC 200 Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
PSYC295	Ind Study in Psychology	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
QSEM100	Quality Assurance Seminar	.25 to 5	Seminar content is dependent upon course requirement. (F,Sp,Su) Prerequisite: None
RELG150	Intro to World Religions	4	This course will provide students with a global perspective on the human religious experience through an introductory examination of the beliefs and practices of world's largest religions: Christianity, Islam, Hinduism, and Buddhism. (F,Sp,S) Prerequisites Course: None. Placement Scores: Reading Level 5 and Writing Level 6 or (ENGL 098 or ENGL 099 concurrently). Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
RELG211	Religions of South/SE Asia	4	This course examines and analyzes the beliefs and practices of Hinduism, Jainism, Buddhism, Sikhism and Islam in the cultural contexts of South and Southeast Asia. Influences of Buddhist and Hindu traditions on modern European and North American culture are also explored. (F, Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
RELG212	Judaism, Christianity & Islam	4	This course examines and analyzes the beliefs and practices of Judaism, Christianity and Islam in cultural contexts from their origins to the present. Global reaches and interactions of these religious traditions are explored in Europe, Africa and the Americas. (F,Sp) Prerequisite: Reading Level 5 and Writing Level 6
RELG241	Old Testament Literature	4	This course surveys the content of Judaism's Bible (Christianity's Old Testament) in its original Hebrew cultural/religious context, using insights of modern critical scholarship. Origins and early development of Hebrew religious beliefs and practices are examined. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Course Notes: 1) A survey of Christianity's Old Testament. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
RELG242	New Testament Literature	4	This course surveys the content of Christianity's New Testament in its original Hebraic and Greco-Roman context, using insights of modern critical scholarship. Origins and early development of Christianity and its religious beliefs and practices are examined. (F,Sp,Su) Prerequisite Course: None. Placement Scores: Reading Level 5 and Writing Level 6. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
RELG250	Religions of East Asia	4	This course surveys the origins and development of East Asian religions. The religious beliefs and practices of Confucianism, Taoism, Buddhism (Mahayana and Vajrayana), and Shinto are examined in terms of their vital role in the development of ancient and modern East Asian civilizations. (Sp) Prerequisite: Reading Level 5 and Writing Level 6
SCIN287	Science Technology Internship	2 to 4	This course provides on-the-job training for an applied degree in science technology. Placement is made at an approved training site to earn credits for satisfactory work performance. This internship may be a paid or unpaid work experience. Students will apply knowledge and skills learned in academic courses to real world situations. (F,Sp,Su) Prerequisite: Department Approval
SCIS297	Independent Study in Science	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
SDEV118	Stretching Your Dollars	2	The basic money management provides students information about and practice at record keeping budget development, and financial goal-setting and planning. The curriculum addresses wise shopping practices, debt management, and consumer issues such as comparison shopping, coupon use, and internet resources. (F,Sp,Su) Prerequisite: Reading Level 1
SDEV124	Techniques of Study	2	Students examine their study habits and work toward practicing skills to enhance classroom performance. Classes include weekly lectures, discussions, and assignments. Skills covered include goal-setting, time management, notetaking, reading and memory strategies, library use, and taking exams. A valuable aid for beginning and advanced students. (F,Sp,Su) Prerequisite: Reading Level 5 or AASD 104 concurrently
SDEV125	Career Planning	2	Students learn a career planning process by identifying their interests, values, and skills through a variety of self assessment exercises. Students will utilize available resources to research career options and participate in classroom discussions on topics relating to career decision-making. (F,Sp,Su) Prerequisite: Reading Level 5 or AASD 104 concurrently
SDEV126	Self-Defeating Behavior	2	The goal of this course is to learn how self-defeating behaviors begin, are maintained, and how they can be eliminated. Behavior change is aimed at teaching people how to live life more fully and happily by identifying and cultivating life-giving behaviors. (F,Sp,Su) Prerequisite: Reading Level 5 or READ 170 concurrently Course Note: Students interested in taking the course must have a recommendation from an LCC Counselor. Contact the Counseling Center at (517) 483-1924 for more information.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
SIGN160	Intro to the Deaf Community	3	This course is designed to introduce the student to the various aspects of life in the deaf community including cultural identity, education, language, the medical perspective, civil rights, disability law, advocacy, audiology, and oppression. Students will be taught up to 300 American Sign Language vocabulary words and phrases, Fingerspelling and numbers. A grade of 2.0 fulfills the Communication Core requirement. (F,Sp,Su) Prerequisite Course(s): None. Placement Score(s): Reading Level 5 and Writing Level 4. Course Notes: 1) May be taken concurrently with SIGN 161. Non-degree students may waive SIGN 160. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SIGN161	American Sign Language I	3	This course introduces the basics of American Sign Language (ASL) and is designed for students who have little or no previous knowledge of ASL. Beginning vocabulary, ASL questions, commands, and simple sentence structures as well as basic personal and descriptive classifiers are introduced to develop rudimentary conversational skills in ASL. Elements of the Deaf Community and Deaf Culture will be introduced. (F,Sp,Su) Prerequisite Courses: Minimum 2.0 in SIGN 160 or concurrently. Placement Scores: Reading Level 5 and Writing Level 4. Course Note: May be taken concurrently with SIGN 160.
SIGN162	American Sign Language II	3	This course is designed to continue development of American Sign Language (ASL) skills. Vocabulary, semantic, classifiers, pluralization, and temporal aspects, beginning grammatical non-manual signals are introduced to develop conversational skills. Elements of the Deaf Community and Deaf Culture will be included.(F,Sp,Su) Prerequisite Course(s): Minimum 2.0 in SIGN 161. Placement Score(s): Reading Level 5 and Writing Level 4.
SIGN163	American Sign Language III	3	This course is designed to continue development of American Sign Language (ASL) skills. Vocabulary, body part classifiers, grammatical non-manual signals, spatial referencing, English idioms, conceptual accuracy practice and beginning role shifting are used to develop conversational skills. Elements of Deaf Community and Deaf Culture will be included.(F,Sp,Su) Prerequisite Course(s): Minimum 2.0 in SIGN 162. Placement Score(s): Reading Level 5 and Writing Level 4.
SIGN164	American Sign Language IV	3	This course is designed to continue development of American Sign Language (ASL) skills. Vocabulary, grammatical non-manual signals, role shifting, conceptual accuracy practice and sign translation are used to develop conversational and sight translation skills. Designed for students intending to become sign language interpreters.(F,Sp) Prerequisite Courses: Minimum 2.0 in SIGN 163 Placement Scores: Reading Level 5 and Writing Level 4
SIGN166	Fingerspelling	3	This course provides the student with concentrated instruction and practice in both expressive and receptive fingerspelling and numbering skills. Designed for students intending to become sign language interpreters. (F,Sp,Su) Prerequisite Course(s): Minimum 2.0 in SIGN 161. Placement Score(s): Reading Level 5 and Writing Level 4. Recommended: SIGN 162 or concurrently.
SIGN167	Beginning Sign to Voice	3	Designed to increase the student's receptive skills in conversational sign language focusing on comprehension of the various manual communication systems utilized by deaf persons. Sign-to-voice techniques and practice will be introduced through use of prepared videotapes. Intended for students who plan to become sign language interpreters. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in SIGN 163 or concurrently Placement Scores: Reading Level 5 and Writing Level 4
SIGN170	Expressive/Receptive ASL	3	This course focuses on grammatical elements of American Sign Language (ASL) using expressive skills. Conversational behaviors will be discussed. Student's receptive and voicing skills will focus on ASL vocabulary recognition, English sentence structure, and vocal tone and volume. (Su) Prerequisite Course: Minimum 2.0 in SIGN 163 or concurrently Placement Score(s): Reading Level 5 and Writing Level 4
SIGN176	Advanced Fingerspelling	2	This course provides the student with advanced concentrated instruction and practice in both expressive and receptive fingerspelling skills. Designed for students intending to become sign language interpreters. (Sp,Su) Prerequisite Course(s): Minimum 2.0 in SIGN 166. Placement Score(s): Reading Level 5 and Writing Level 4.
SIGN200	Applied Skill in the Workplace	2	Prepares students to develop working relationships within the field of interpreting. This course will focus on ethics, professional behavior, development of a professional website/portfolio, and networking. This course will prepare students for directed observation and application of practical interpreting skills required in the consecutive semesters. Job shadow required. (F) Prerequisite Courses: None Placement Scores: Successfully pass ITP screening

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
SIGN240	Intro to Transliteration	3	American Sign Language vocabulary will continue to be developed while learning about the interpreting and transliterating process. Students will analyze text and demonstrate the ability to facilitate communication in both ASL sentence structure or English word order. The class involves expressive and receptive skill development. Course is designed for students intending to be sign language interpreters. (F) Prerequisite Courses: None. Department Approval Required Placement Scores: None
SIGN250	Deaf Culture and History	3	This course looks closely at the unique experiences of those in the Deaf Community by examining the history of the Deaf Community in America and the sociology of Deaf, Deaf-Blind, and Hard of Hearing people. Designed for students intending to become sign language interpreters. (Sp) Prerequisite Courses: Minimum 2.5 in SIGN 200 or concurrently Placement Scores: Reading Level 5 and Writing Level 4
SIGN260	Linguistic Principles of ASL	3	An overview of the linguistic principles of American Sign Language (ASL) including its basic phonology, morphology, syntax, variation, results of language contact with English and other signed languages, pragmatics, bilingualism and language as art. Topics relating to interpreting, the Deaf Community, and Deaf Culture will be emphasized. Designed for students intending to become sign language interpreters. (F) Prerequisite Courses: Minimum 2.0 in SIGN 163 Placement Scores: Reading Level 5 and Writing Level 4
SIGN261	Principles of Interpreting	3	Surveys professional interpreting through lecture, role-playing, and classroom discussion. Introduces the ethics of interpreting and, roles and responsibilities of the professional interpreter. Examines necessary skills of the interpreter in various settings: educational, mental health, vocational rehabilitation, legal, religious, phone, television, medical, deaf, blind, and minimal language skills. (F) Prerequisite Courses: Department Approval Required Placement Scores: None
SIGN263	Intermediate Sign to Voice	3	This course develops and refines necessary basic skills and fluency in receptive sign language and for voicing all levels of communication of deaf individuals. Techniques taught include interpreter task analysis, listening, attending, internal message formulation, vocabulary search, and monitoring output. Designed for students intending to become sign language interpreters. (Sp) Prerequisite: Minimum 2.5 in (SIGN 240 and SIGN 261) and Reading Level 5 and Writing Level 4
SIGN266	Educational Interpreting	2	This course provides students with simulated testing settings using movies of hearing and Deaf individuals interacting with the purpose of developing skills necessary for interpreter evaluation. Students will develop teaming skills, feedback skills, and interpreting skills. Designed for students intending to become sign language interpreters. (Su) Prerequisite Course(s): Minimum 2.5 in SIGN 263. Placement Score(s): Reading Level 5 and Writing Level 4.
SIGN267	Sign Practicum I	3	Combines student transliterated lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend an additional 8 hours a week in their placement setting. Designed for students intending to become sign language interpreters. (Sp) Prerequisite: Minimum 2.5 in (SIGN 240 and SIGN 261) and Reading Level 5 and Writing Level 4
SIGN268	Sign Practicum II	3	Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend an additional 8 hours a week in their placement setting. Designed for students intending to become sign language interpreters. (Su) Prerequisite Course(s): Minimum 2.5 in SIGN 267. Placement Score(s): Reading Level 5 and Writing Level 4.
SIGN270	Advanced Interpreting	3	This course continues the development of skills necessary for interpreter evaluation/qualification. Students will be provided with simulated testing situations using interactive videotapes of hearing/deaf individuals requiring students to interpret/transliterate. Designed for students intending to become sign language interpreters. (F) Prerequisite Courses: Minimum 2.5 in (SIGN 266 and SIGN 268) Placement Scores: Reading Level 5 and Writing Level 4
SIGN271	Advanced Sign to Voice	3	This course provides advanced skill development and fluency in voicing for all communication levels of deaf persons. Techniques taught are voice projection, breathing and relaxation, analysis of sign information, anticipation and prediction, closure, modality switching, correction, image search, decalage, and pacing. Designed for students intending to become sign language interpreters. (Sp) Prerequisite: Minimum 2.5 in SIGN 270 and Reading Level 5 and Writing Level 4
SIGN294	Sign Lang Interpreting Seminar	3	Special topics for intermediate and advanced interpreters. Topics cover a broad range of subjects related to the interpreting field and include preparation for state and national exams. (F,Sp) Prerequisite Courses: Minimum 2.5 in SIGN 263 or Department Approval Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
SIGN295	Ind Study in Sign Language	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. Restricted to students intending to become sign language interpreters. (F,Sp,Su) Prerequisite Course(s): None. Department Approval is required. Placement Score(s): None.
SOCL120	Introduction to Sociology	4	A survey of major theoretical perspectives, concepts, and methods of sociology. Emphasis is placed on societal transformation, social organization, culture, cultural diversity, socialization, social stratification, social institutions, and social change within a global context.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SOCL185	Intro African-American Studies	3	A survey of culture and social structure of people of African descent and their role in the making of the US society. Theories and concepts pertinent to understanding the development and dynamics of contemporary African-American experience will be explored. Topics include slavery, multiculturalism, civil rights movement and affirmative action. (F,Sp) Prerequisite: Reading Level 5 Recommended: (Minimum 2.0 in ENGL 121 [formerly WRIT 121] or ENGL 131 [formerly WRIT 131]) or Writing Level 6 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SOCL254	Marriage and Family	3	A survey of theoretical perspectives on the institutions of marriage and family. Topics include the historical context of family, gender roles, sexual behavior, values, psychological needs, divorce, parenting, family problems, and social policy. Variations in family types and lifestyles among diverse groups within the U. S. and elsewhere are examined. (F,Sp, Su) Prerequisite Course: Minimum 2.0 in (SOCL 120 or PSYC 200) Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SOCL255	Contemporary Social Problems	3	This course is a theoretical and empirical survey of the nature and causes of social problems such as poverty, crime, racial and gender inequality, demographic and environmental changes, health care, education and family stability. Examples from other societies will be used for comparative analysis and establishing global links. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in SOCL 120 Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SOCL260	Race and Ethnicity	3	Sociological study of race and ethnicity in the U.S. and globally. Emphasis is placed on theories of race, racial and ethnic group formation, ethnic stratification, identity formation, immigration and struggles for equality. Racial and ethnic group experiences in Western and non-Western societies are traced historically and viewed comparatively. (F,Sp, Su) Prerequisite Course: Minimum 2.0 in SOCL 120 Placement Score: Reading Level 5 Recommended: Writing Level 6 or Minimum 2.0 in (ENGL 121 or ENGL 131) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SOCL295	Independent Study in Sociology	1 to 4	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
SOWK101	Introduction to Social Work	3	This course introduces the principles and many facets of social work practice. Emphasis is on the history of social work, description of methods, skills, competencies, and standards of ethical practice. There is an overview of social work roles and careers in agencies and institutions with relevance to the diverse social and client needs. (F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 and Writing Level 6

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
SPAN121	Elementary Spanish I	4	First course of a two-semester sequence in elementary Spanish. Designed for persons with no knowledge of Spanish who wish to develop basic language skills. Elementary practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (F,Sp,Su) Prerequisite Course: None. Placement Score: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently). Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SPAN122	Elementary Spanish II	4	Second course of a two-semester sequence in elementary Spanish. Introduces more complex structures while developing a foundation in the essentials of the language. Emphasizes practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (F,Sp, Su) Prerequisite Courses: Minimum 2.0 in SPAN 121 or equivalent. Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently). Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SPAN201	Intermediate Spanish I	4	First course of a two-semester sequence in intermediate Spanish. Begins with review of grammar, and continues with intensive vocabulary building, listening comprehension, and writing compositions. Encourages conversation by introducing discussions about the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (F) Prerequisite Courses: Minimum 2.0 in SPAN 122 or equivalent. Placement Scores: Reading Level 5 or ENGL 098 or ENGL 099 or NCSS 101 concurrently. Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
SPAN202	Intermediate Spanish II	4	Second course of a two-semester sequence in intermediate Spanish. Continues a review of grammar, intensifies vocabulary building, strengthens listening comprehension and composition writing, and improves oral fluency through intense discussions on the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (Sp) Prerequisite Courses: Minimum 2.0 in SPAN 201 or equivalent. Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 or NCSS 101 concurrently). Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
STAT170	Introduction to Statistics	4	This is an introductory course in concepts and methods of statistics, with an emphasis on data analysis. Topics studied include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, and chi-square tests. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 105 or MATH 106) or (MATH 097 concurrently) or Math Level indicated below Placement Scores: Reading Level 5 and Writing Level 4 and Math Level 5 Recommended: Graphing Calculator Required, TI-83/84 series is recommended, TI-84 Plus CE is highly recommended Course Notes: 1) A student should take either STAT 170 or STAT 215 (not both), depending on his/her transfer institution. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
STAT215	Intro to Probability and Stats	4	This is an introductory course in probability and statistics. Topics studied include descriptive statistics, probability, random variables, normal distribution, t distribution, chi-square distribution, F distribution, confidence intervals, hypothesis testing, correlation, and linear regression. In addition, students will solve applied problems by completing required computer assignments. (F,Sp,Su) Prerequisite Course: Minimum 2.0 in (MATH 120 or above) or Math Level 7 noted below Placement Scores: Reading Level 5 and Writing Level 4 and Math Level Recommended: Knowledge of Windows software and Graphing Calculator Required, TI-83/84 series is recommended, TI-84 Plus CE is highly recommended Course Notes: 1) A student should take either STAT 170 or STAT 215 (not both), depending on his/her transfer institution. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
SURG100	Fundamentals of Surgical Tech	3	Introduction to role and function of the surgical technologist as a member of the surgical team. Lectures present all skills, procedures, and protocol necessary to participate in the operating room. (F) Prerequisite Course: None. Admission to Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 101 and SURG 108 and SURG 109 and SURG 121 and SURG 122
SURG101	The Surgical Patient	2	Lectures will present the protocol and procedures directly affecting the care and safety of the patient. This includes the ethical, legal, and moral responsibilities of the technologist, the concepts of patient care, and preoperative routines, along with elements of proper documentation and risk management. (F) Prerequisite Course: None. Admission to Surgical Technology Program Placement Score: None Co-requisite Courses: SURG 100 and SURG 108 and SURG 109 and SURG 121 and SURG 122
SURG103	Surgical Asepsis	2	This course defines and describes pathogenic microorganisms and the causes and prevention of infection in the hospital. The student will be introduced to sterilization, disinfection, and other methods of controlling microbial growth. (F,Sp) Prerequisite Course: None Placement Score: None Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit the Testing Services website.
SURG106	Surgical Tech Directed Study	1 to 3	This course is designed to update or enhance knowledge, skills, and competencies for the returning Surgical Technology student or for remediation in the program through evaluation of previous learning, self-study, and scheduling into preceptor-directed clinical mentorship. It requires at least 16 hours of independent work for each credit or 48 hours of clinical per credit. A learning contract specifying objectives, activities and outcomes is required. (As Needed) Prerequisite Course: None. Department Approval is required. Placement Score: None
SURG108	Surgical Pharmacology	2	This course introduces the student to basic types of anesthesia, anesthesia agents, indications and contraindications of medications, and the calculations of maximum dosages of various drugs. The student will become familiar with a wide array of pharmacological agents specifically related to the peri-operative care being provided for the surgical patient. (F) Prerequisite Course: None. Admission to Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 100 and SURG 101 and SURG 109 and SURG 121 and SURG 122
SURG109	Basic Operative Procedures	2	This course introduces the student to basic types of surgical procedures with a primary focus on the sequential steps involved in these procedures. Surgical anatomy, physiology and pathophysiology will be addressed relative to basic surgical intervention. Students will become familiar with instrumentation, anticipatory skills, and surgical asepsis and surgical conscience. (F) Prerequisite Course: None. Admission to Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 100 and SURG 101 and SURG 108 and SURG 121 and SURG 122
SURG110	Advanced Surgical Procedures	6	This course introduces the student to intermediate and advanced surgical procedures with a primary focus on the sequential steps involved in these procedures, higher difficulty cases, and specialized instrumentation. Surgical anatomy, physiology, and pathophysiology will be addressed. The biomedical sciences will also be addressed: robotics, physics, computers, and electricity. (Sp) Prerequisite Course: None. Successful completion of 1st semester of the Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 111 and SURG 112 and SURG 123 and SURG 124
SURG111	Surgical Specialty/Prof Prep	2	This course focuses on preparing the student for life-long learning. An emphasis will be placed on advanced technologies, a look to the future of tele-surgery, the operating room ten years out, and advances in specialty surgeries. Preparation for the national certification exam will be provided in a review of core components. (Sp) Prerequisite Course: None. Successful completion of 1st semester of the Surgical Technology Program is required. Co-requisite Courses: SURG 110 and SURG 112 and SURG 123 and SURG 124 Course Note: $307 of the course fee is for a medical kit and is non-refundable.
SURG112	Surgical Clinical Compliance	1	This course includes weekly conversations relative to the clinical experience, tracking of required surgical cases, and competencies reviewed for satisfactory compliance. The instructor will review clinical site evaluations and documentation, along with validation by students, preceptors, and faculty. A review component for surgical anatomy and surgical procedures will comprise a portion of this course. (Sp) Prerequisite Course: None. Successful completion of 1st Semester of the Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 110 and SURG 111 and SURG 123 and SURG 124

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
SURG121	Applied Surgical Techniques I	2	This course covers the application of theory in the use of surgical supplies and equipment which will prepare students to scrub in for actual surgical procedures. A specified number of competencies will need to be successfully completed to advance to SURG122. (F) Prerequisite Course: None. Admission to Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 100 and SURG 101 and SURG 108 and SURG 109 Course Note: $400 of the course fee is for a medical kit and is non-refundable.
SURG122	Applied Surgical Techniques II	3	This course prepares students for the actual operating room experience through application of theory and clinical skills in mock surgical procedures. Basic surgical procedures will be presented, with some hands-on experience utilizing surgical simulators, along with additional competencies pertaining to circulating duties, disinfection, and sterilization. (F) Prerequisite Course: Pass grade in SURG 121 or concurrently Placement Score: None Co-requisite Courses: SURG 100 and SURG 101 and SURG 108 and SURG 109
SURG123	Applied Surgical Techiq III	4	This clinical session at a hospital provides the student with the application of theory and clinical skills in basic and advanced surgical procedures and specialty areas. (Sp) Prerequisite Course: None. Successful completion of 1st semester of the Surgical Technology Program is required. Placement Score: None Co-requisite Courses: SURG 110 and SURG 111 and SURG 112
SURG124	Applied Surgical Techniques IV	4	A continuation of SURG 123, this course is a clinical session at a hospital. It covers the application of theory and clinical skills in basic and advanced surgical procedures and surgical specialty areas. (Sp) Prerequisite Course: Minimum 2.5 in SURG 123 or concurrently Placement Score: None Co-requisite Courses: SURG 110 and SURG 111 and SURG 112
SURG150	Surgical Tech Special Topics	.25 to 8	This course provides seminars for health professionals such as surgical technologists and operating room nurses. Specific up-to-date course content will vary with each seminar and will be related to the surgical team, surgical procedures, or surgical instrumentation. (As Needed) Prerequisite Course: Determined by Section Placement Score: Determined by Section
THEA110	Introduction to Theatre	3	Introduction to Theatre includes definition and analysis of theatrical art, incorporating script analysis, theatre history, the relationship between theatre and the culture from which it comes, and the roles of theatre practitioners.(F,Sp,Su) Prerequisite Course: None Placement Scores: Reading Level 5 or (ENGL 098 or ENGL 099 concurrently) Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
THEA120	Introduction to Acting	2	Explores various acting techniques and introduces the beginning student to the skills necessary to maintain a sustained dramatic performance. Theatre games and improvisation exercises to overcome stage fright and to develop concentration and listening skills are heavily emphasized. Students present final short scene.(F,Sp,Su) Prerequisite Course: None Placement Scores: None
THEA131	Studio Theatre Performance I	1	Course includes rehearsal, performance, and evaluation of a contemporary script. Focus is on an understanding and implementation of skills acquired in THEA 141 and the relationships experienced between actor and director. (F,Sp) Prerequisite Courses: Minimum 2.0 in THEA 141 or concurrently Placement Scores: None
THEA132	Studio Theatre Performance II	1	Rehearsal, performance, and evaluation of a script which incorporates heightened language and movement. Focus is on expanding the actor's physical and vocal expressiveness. (Sp,Su) Prerequisite: Department Approval
THEA141	Acting I - Contemporary	2.5	Fundamentals of acting, including improvisational techniques; the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. (F,Sp) Prerequisite Courses: None. Placement Scores: None
THEA143	Stage Voice for the Actor	3	Course will cover exercises in vocal production: posture, support, relaxation, resonance, projection, and enunciation. Focus will be on exercises to develop vocal flexibility from Rodenburg, Linklater, and/or Berry techniques. Students will experience vocal techniques which lead to greater emotional awareness and responsiveness. (F,Su) Prerequisite: None
THEA150	Acting for the Camera	3	Acting techniques and methods relevant to camera work will be explored. Student work is videotaped and critiqued. Acting for the Camera applies and builds on fundamentals established in Introduction to Acting. (Sp) Prerequisite: Department Approval
THEA160	Stage Combat	2	Students learn to use a variety of weapons and hand to hand combat styles on stage. Students learn the style of combat used in theatre/film industry. Students explore fight scenes, basics of mechanics of choreographing fight scenes, and are instructed on basic safety procedures for choreographing/executing fight sequences. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None Recommended: THEA 120

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
THEA170	Stage Combat II: Film Combat	3	In this course students will learn how to use a variety of weapons and hand-to-hand combat styles for film and will learn the style of combat currently used in the film industry. Students will explore fight scenes to understand the basics of the mechanics of choreographing a fight scene, and will be instructed on the basic safety procedures for choreographing and executing fight sequences to be filmed. (Sp) Prerequisite Course: None Placement Scores: None Recommended: THEA 160.
THEA171	Play Analysis	3	An analysis of modern contemporary classics of the theatre. The student will read and analyze a minimum of four modern or contemporary scripts. The student will develop a comprehensive production concept for one of these scripts. (F,Sp) Prerequisite: None
THEA173	Movement for the Actor	2	Course will cover strategies developing student's physical endurance, reflect, flexibility, and grace. Students will learn the human inner experience in the sphere of human silence. Students may explore movement to music, mime, and/or dance styles and techniques from world cultures. (Sp,Su) Prerequisite: None
THEA181	Improvisation	2.5	By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development. (Sp,Su) Prerequisite: None
THEA210	Theatre History	4	Examines the history of Western Theatre, including the literature, performance conventions, the physical theatre, and major figures from the Greek to Modern eras. (F,Sp) Prerequisite Courses: None Placement Scores: Reading Level 5 and Writing Level 6 Recommended: THEA 110 Course Note: An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For additional information, please visit http://www.lcc.edu/assessment/off_campus/online_support.aspx.
THEA220	Play Directing	3	Introduction to the fundamentals of directing a play, including play analysis, stage composition and working with actors. Practical experience through scene work and class exercises will be emphasized. Students will demonstrate their mastery of the principles taught by directing and presenting a short one-act play for an audience. (Sp) Prerequisite Course: Minimum 2.0 in THEA 110 or Department Approval Placement Score: None
THEA223	Independent Study in Theater	1 to 3	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F,Sp,Su) Prerequisite: Department Approval
THEA224	Special Subjects in Theater	1 to 4	This seminar allows students to take courses in various theater techniques. It offers either state-of-the-art techniques or an opportunity to work with professionals. Seminars include topics such as stage, film, or theatrical combat and new techniques in acting. (F,Sp,Su) Prerequisite Courses: Determined by Section Placement Scores: Determined by Section
THEA225	Building a Character	2	This course will focus on giving theatre majors “an acting toolbox” for creating fully realized characters on stage. Class will focus on the Chekhov Technique, which emphasizes the psycho-physical development of character, as well as the language- based techniques of John Barton. Master Classes by professional actors from the Stratford Shakespeare Festival may be included. (F) Prerequisite Course: None Placement Scores: None Co-requisite: THEA 233 and THEA 240
THEA233	Studio Theatre Performance III	2	Students will rehearse and perform a Shakespeare play. (F) Prerequisite Courses: Minimum 2.0 in (THEA 131 and THEA 132 and THEA 141 and THEA 143) or Department Approval Placement Scores: None Co-requisite Course: THEA 240
THEA240	Acting-Shakespeare	3	Students will explore the unique demands of acting and speaking Shakespeare and the qualities of his verse, including alliteration, assonance, rhymes, antithesis, puns, onomatopoeia, imagery, and iambic rhythms. Status, social, and historical context will be addressed. (F) Prerequisite Courses: Minimum 2.0 in (THEA 131 and THEA 141 and THEA 143) or Department Approval Placement Scores: None Co-requisite Course: THEA 233
THEA283	Audition Workshop	2	Students will learn audition and resume preparation and will prepare and polish two contrasting monologues for auditions. Students will learn the audition and application processes for advanced training. (Sp) Prerequisite: Department Approval
THEA285	Stage Makeup	2	A course in the application of stage makeup to develop a character and to assist the actor in sustaining the character in performance. Emphasizes skills in the use of different kinds of makeup, hair styling, and appearance changes. (F) Prerequisite Courses: None Placement Scores: None

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
TSEM100	Technical Related Seminar	.25 to 5	This course will cover a variety of topics in technical related fields. For individuals already in the environment seeking to upgrade their skills or anyone looking to be employed in a particular career field. (F,Sp,Su) Prerequisite: None
WELD102	Industrial/Construction Safety	2	This course covers safety in the industrial workplace and on construction worksites. Included are local, state and federal safety regulations. The focus will be on the prevention of accidents but will teach the correct response if an accident should occur. First aid, CPR/AED certificates will be issued upon successful completion. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Course Notes: 1) This course requires students to be certified in CPR and First Aid as part of the course grade. Training will occur as part of traditional on-campus sections. Online students have the option of attending CPR and First Aid sessions at LCC's West Campus. Students who cannot travel to LCC will need to make other arrangements to become certified. Additional costs may be incurred if the scheduled CPR and First Aid sessions are not used. 2) An online course may require students to travel to an exam site for proctored exams. You may also request to test at an approved proctored location (additional fees may apply). For more information on proctored test sites, please visit the Testing Services website. 3) Online students CANNOT qualify for the OSHA-10 certification due to OSHA limitations. Students requiring OSHA-10 Certification should enroll in one of the lab/lecture sections. $11 of the Course Fee is non-refundable.
WELD103	Combination Welding	4	This is a beginning theory and practice course which will introduce the safe operations and applications of oxyacetylene welding, torch cutting, plasma cutting, brazing and shielded metal arc welding. Practice will consist of these methods of joining steel in the horizontal, flat and vertical positions. Destructive testing will also be provided. (F, Sp, Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Recommended: Math Level 3 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD105	Advanced ARC Welding	4	Students will develop the skills necessary to produce quality multiple pass fillet and groove welds on steel plates. Conventional and low hydrogen electrodes are used in preparation of passing performance tests in all positions. Destructive testing methods, weld profiles and welding symbols as related to arc welding are introduced. (F, Sp) Prerequisite Course: Minimum 2.0 in WELD 103 Placement Scores: Reading Level 3 and Writing Level 2 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD108	Welding for Non-Majors	4	This is a beginning theory and practice course which will introduce the safe operations and applications of torch cutting, plasma cutting, Gas Metal Arc Welding, and Shielded Metal Arc Welding. Practice will consist of these methods of joining steel in the horizontal, flat, and vertical positions. Destructive testing will also be performed. (F, Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Course Note: This course is for Mechatronics major students only. Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD110	Gas Metal ARC Welding	4	Provides technical understanding and applications of gas metal arc welding and flux cored arc welding. Fundamentals, safety, equipment adjustments, metal transfers and shielding gases will be covered. Develops manual skill in all positions on different thicknesses and types of metals, including mild steel, aluminum and stainless steel. (F,Sp,Su) Prerequisite Courses: None Placement Scores: Reading Level 3 and Writing Level 2 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD111	Gas Tungsten ARC Welding	4	Students will develop the skills, principles and applications of gas tungsten arc welding. Welds will be done on different thickness of ferrous and non-ferrous metals in all positions. Proper material cleaning, fit up and safety are also introduced. (F,Sp) Prerequisite Courses: Minimum 2.0 in (WELD 103 or AUTO 100 or AUTB 114) Placement Scores: Reading Level 3 and Writing Level 2 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.

COURSE	TITLE	CREDIT HOURS	COURSE DESCRIPTION
WELD115	Robotic MIG Welding	3	Students will learn to program a MIG welding robot through a teach pendant, edit programs, set weld schedules, as well as learn some basic fixture building skills. This course also provides fundamental safety precautions while programming and operating the robotic component. (F, Sp) Prerequisite Course: Minimum 2.0 in WELD 110 Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)] Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD125	Structural Blpt Reading/Weld	2	Blueprint and welding symbols are the universal language of the welding industry. This course is for students, apprentices, technicians and others who must develop the ability to read and accurately interpret blueprints. Teaches awareness of the advancement in metallurgy, welding processes, consumables and strict code enforcement used in industry today. (F, Sp) Prerequisite Course: None Placement Scores: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
WELD140	Creative Welding	2	This is a course for people with an interest in artwork in a metal medium. Participants will become familiar with welding, cutting, and basic design processes for the purpose of exploring creative expression. (F,Sp) Prerequisite Courses: None Placement Scores: None Recommended: Course work or experience in art/design Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD170	Special Topics in Welding	.25 to 8	This course offers students the opportunity to learn new or advanced skills in welding and other related topics. Specific content may vary with each offering but will be related to the Welding Program and profession. (F,Sp,Su) Prerequisite Courses: None Placement Scores: None
WELD191	Welding Project Lab	1 to 4	An opportunity for students to expand upon welding skills in maintenance welding, production welding, resistance welding and/or tool and die welding, depending on the direction the student would like to take his/her welding skills. Actual projects must be discussed and agreed upon by both the instructor and the student. (F,Sp,Su) Prerequisite Courses: None. Department Approval is required. Placement Scores: None
WELD201	Tool and Die Welding	3	Theory and practice methods involved in welding various alloyed metals, preheating and postheating of metals, recognition of materials, alloying elements and their effects. The proper usage of air, oil and water hardening steels will also be covered. (F) Prerequisite Courses: Minimum 2.0 in (METM 190 and WELD 105 and WELD 111) Placement Scores: Reading Level 3 and Writing Level 2 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class. $10 of the Course Fee is non-refundable.
WELD205	Pipe Welding	4	Theory, cutting, fit up and practice on different sizes of pipe using shielded metal arc welding. Varied weld and base metal testing methods are used to the strict code requirements. Focus on low hydrogen type electrodes in groove welds in the 2G, 5G, and 6G positions. (Sp) Prerequisite Course: Minimum 2.5 in WELD 105 Placement Scores: Reading Level 3 and Writing Level 2 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD220	Structural Fab & Inspection	4	Introduction to steel fabrication in accordance with the American Welding Society Structural Welding Code D1.1 applications and requirements. The student will be introduced to the numerous destructive and nondestructive methods of welding inspections. Satisfactory completion of this course will assist the student in passing a welding certification test. (F) Prerequisite Courses: Minimum 2.5 in (WELD 105 and WELD 110 and WELD 125) Placement Scores: Reading Level 3 and Writing Level 2 and Math Level 4 Course Note: Students need to bring their own safety glasses, pliers, leather welding gloves and leather work boots to start welding on the first day of class.
WELD250	Welding Internship	3	This course provides welding students with practical work experience in industry. Students work for an employer in a supervised environment which provides an opportunity to apply knowledge and skills learned in the classroom and lab to an actual job situation. (F,Sp) Prerequisite Courses: None. Department Approval is required. Placement Scores: None Recommended: 2.5 GPA or greater