

2023-2024 Course Descriptions

ACAD 100 First-Year Experience

Credit Hours: 1 / Billing Hours: 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 (ENGL 098 or ENGL 099 or ESOL 098 or ESOL 099)

ACCG 100 Practical Accounting Non-Major

Credit Hours: 3 / Billing Hours: 3

Students will learn the bookkeeping procedures necessary for preparation of financial statements and payroll. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Math Level 4

ACCG 101 Accounting Info for Management

Credit Hours: 3 / Billing Hours: 3

Students will learn to interpret financial statements and use this information for analysis, budgeting, and decision-making. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Math Level 4

ACCG 102 Special Topics in Accounting

Credit Hours: 1 to 4 / Billing Hours: 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 Course: None. Prerequisite is determined by the section.
- Placement Score: None

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ACCG 160 Payroll Systems and Taxes

Credit Hours: 2 / Billing Hours: 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,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Math Level 4
- Recommended: ACCG 100 or 210
- Course Note: Knowledge of Microsoft Excel is recommended, and access to Microsoft Excel is needed to complete required assignments.

ACCG 161 Accounting with Quickbooks

Credit Hours: 2 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Math Level 4
- Recommended: ACCG 100 or equivalent coursework or equivalent work experience.

ACCG 210 Principles of Financial Accg

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Math Level 4
- Course Note:
 - 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) Access to Microsoft Excel is needed to complete required assignments.

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ACCG 211 Principles of Managerial Accg Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Math Level 4
- Recommended: Intermediate Algebra or higher
- Course Note:
 - 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) Access to Microsoft Excel is needed to complete required assignments.

ACCG 215 Financial Data Analytics Credit Hours: 4 / Billing Hours: 4

An overview of data analytics, focusing on the application of analytical and quantitative tools in business decision-making. Introduces students to the analytical techniques and tools used in collecting, cleansing, transforming, analyzing, visualizing, and communicating data in accounting, finance, marketing, and business management. Students gain hands-on knowledge of Excel and other analytical applications and tools supporting the use of data for decision-making. (F,Sp)

- Prerequisite Course: Minimum 2.0 in ACCG 210
- Placement Score: Reading Level 5 and Math Level 4
- Corequisite Course: ACCG 211
- Recommended: Basic knowledge of Excel and statistics.

ACCG 220 Intermediate Accounting I Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in ACCG 211
- Placement Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel recommended, and access to Microsoft Excel is needed to complete required assignments.

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ACCG 221 Intermediate Accounting II

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel is recommended, and access to Microsoft Excel is needed to complete required assignments.

ACCG 230 Cost/Managerial I

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in ACCG 211
- Placement Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel is recommended, and access to Microsoft Excel is needed to complete required assignments.

ACCG 240 Federal Income Tax I

Credit Hours: 4 / Billing Hours: 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. (Sp,Su)

- Prerequisite Course: Minimum 2.0 in ACCG 210
- Placement Score: Reading Level 5

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ACCG 241 Federal Income Tax II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in ACCG 240
- Placement Score: Reading Level 5

ACCG 245 Accounting Internship

Credit Hours: 2 / Billing Hours: 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 their 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 Score: None
- Recommended: Minimum of 8 upper level ACCG credits

ACCG 260 Accounting Systems

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in ACCG 211
- Placement Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel is recommended, and access to Microsoft Excel is needed to complete required assignments.

ACCG 266 Independent Study Accounting

Credit Hours: 1 to 4 / Billing Hours: 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 Course: Department Approval

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ACCG 271 Principles of Finance

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel recommended, and access to Microsoft Excel is needed to complete required assignments.

ACCG 280 Governmental Accounting

Credit Hours: 3 / Billing Hours: 3

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. (F)

- Prerequisite Course: Minimum 2.0 in ACCG 211
- Placement Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel recommended, and access to Microsoft Excel is needed to complete required assignments.

ACCG 290 Auditing

Credit Hours: 4 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in ACCG 221 or concurrently
- Placement Score: Reading Level 5
- Course Note: Knowledge of Microsoft Excel recommended, and access to Microsoft Excel is needed to complete required assignments.

2023-2024 Course Descriptions

AEET 175 Special Topics/Altern Energy Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

AEET 275 Sustainable Building Design Credit Hours: 4 / Billing Hours: 6

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 Course: None. Department Approval is required.
- Placement Score: None

AEET 280 Alternative Energy Practicum Credit Hours: 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AERO 110 USAF Heritage & Values I-Lab Credit Hours: 1 / Billing Hours: 2

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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University at (517) 355-2168 for specific days and times.

AERO 111 USAF Heritage & Values I Credit Hours: 1 / Billing Hours: 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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University, (517) 355-2168, for specific days and times.

AERO 112 USAF Heritage & Values II Credit Hours: 1 / Billing Hours: 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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University, (517) 355-2168, for specific days and times.

2023-2024 Course Descriptions

AERO 113 USAF Heritage & Values II-Lab Credit Hours: 1 / Billing Hours: 2

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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University, (517) 355-2168, for specific days and times.

AERO 210 USAF Team & Ldrshp Fund I-Lab Credit Hours: 1 / Billing Hours: 2

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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University, (517) 355-2168, for specific days and times.

AERO 211 USAF Team & Leadership Fund I Credit Hours: 1 / Billing Hours: 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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University, (517) 355-2168, for specific days and times.

2023-2024 Course Descriptions

AERO 212 USAF Team & Leadership Fund II Credit Hours: 1 / Billing Hours: 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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at Michigan State University, (517) 355-2168, for specific days and times.

AERO 213 USAF Team/Leadrsbp Fund II-Lab Credit Hours: 1 / Billing Hours: 2

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 Course: None. Department approval is required.
- Placement Score: None
- Course Note: Call Aerospace Studies at MSU, (517) 355-2168, for specific days and times.

ANTH 120 Introduction to Anthropology Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

ANTH 270 Cultural Anthropology

Credit Hours: 3 / Billing Hours: 3

This course is an introduction to culture from holistic, comparative, and global perspectives, and explores capabilities like language, ecological adaptation, family, and healing systems, acquired by humans as members of their society. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

ANTH 271 Medical Anthropology

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

ANTH 272 Food and Sustainability

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: ANTH 120 or ANTH 270 or SOCL 120

ANTH 275 Biological Anthropology

Credit Hours: 4 / Billing Hours: 4

An introduction to the history, methods, and theoretical concepts of archaeology as a sub-discipline of anthropology. Archaeologists study preserved material remains, which are used to construct interpretations about past cultures. Students will consider the social relevance archaeological discoveries might have on modern problems, including environmental degradation, conflict, and cultural identity. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

ANTH 276 Introduction to Archeology

Credit Hours: 3 / Billing Hours: 3

An introduction to the history, methods, and theoretical concepts of archaeology as a sub-discipline of anthropology. Archaeologists study preserved material remains, which are used to construct interpretations about past cultures. Students will consider the social relevance archaeological discoveries might have on modern problems, including environmental degradation, conflict, and cultural identity. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

ANTH 280 Forensic Anthropology

Credit Hours: 3 / Billing Hours: 3

Forensic anthropologists apply the principles of skeletal biology and anthropological theory to medico-legal contexts. As an introduction to the methodology of forensic anthropologists and relevant themes, students will engage with current and past forensic cases. Students will be exposed to ethical issues, controversies, excavation, and treatment of the dead in forensic research. The course is designed to focus on practical applications of forensic anthropology with a focus on problem-oriented research studies. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

ANTH 300 Applied Field Survey Methods

Credit Hours: 4 to 8 / Billing Hours: 4 to 8

This course introduces the methods used to collect and analyze archaeological data in hands-on field and lab settings. Students will learn survey techniques used in archaeology, incorporating skills in geography, geology, and geospatial science. Skills emphasized include site mapping, controlled excavation, on-site documentation, artifact curation, and geospatial data analysis. The course includes a field internship at an active archaeological survey location. (F,Sp)

- Prerequisite Course: Minimum 2.0 in ANTH 276 or concurrently
- Placement Score: (Reading Level 5 and Writing Level 6) or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently) and Math Level 4

2023-2024 Course Descriptions

APPR 170 Inside Wireman Apprentice 1-A Credit Hours: 4 / Billing Hours: 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

APPR 171 Inside Wireman Apprentice 1-B Credit Hours: 4 / Billing Hours: 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

APPR 172 Inside Wireman Apprentice 1-C Credit Hours: 4 / Billing Hours: 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

APPR 173 Inside Wireman Apprentice 2-A Credit Hours: 4 / Billing Hours: 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

2023-2024 Course Descriptions

APPR 174 Inside Wireman Apprentice 2-B Credit Hours: 4 / Billing Hours: 4

Students will study the installation of nonmetallic 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

APPR 175 Inside Wireman Apprentice 2-C Credit Hours: 4 / Billing Hours: 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

APPR 176 Inside Wireman Apprentice 3-A Credit Hours: 4 / Billing Hours: 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

APPR 177 Inside Wireman Apprentice 3-B Credit Hours: 4 / Billing Hours: 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 nonmetallic sheathed cable, flexible metal conduit, electrical metallic tubing and rigid conduit are practiced. (F,Sp,Su)

- Prerequisite: Current IBEW Electrical Apprentice

2023-2024 Course Descriptions

APPR 178 Inside Wireman Apprentice 3-C Credit Hours: 4 / Billing Hours: 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

APPR 179 Inside Wireman Apprentice 4-A Credit Hours: 4 / Billing Hours: 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

APPR 180 Inside Wireman Apprentice 4-B Credit Hours: 4 / Billing Hours: 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

APPR 181 Inside Wireman Apprentice 4-C Credit Hours: 4 / Billing Hours: 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

2023-2024 Course Descriptions

APPR 182 Inside Wireman Apprentice 5-A Credit Hours: 4 / Billing Hours: 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

APPR 183 Inside Wireman Apprentice 5-B Credit Hours: 4 / Billing Hours: 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

APPR 184 Inside Wireman Apprentice 5-C Credit Hours: 4 / Billing Hours: 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

APPR 220 Special Topics/Electricians Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

2023-2024 Course Descriptions

APPR 225 Fire Alarms

Credit Hours: 3 / Billing Hours: 4

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

APPR 227 Supervisor Training

Credit Hours: 4 / Billing Hours: 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

APPR 228 Conduit Fabrication

Credit Hours: 3 / Billing Hours: 4

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

APPR 230 Motor Control Level I

Credit Hours: 3 / Billing Hours: 4

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

2023-2024 Course Descriptions

APPR 231 Motor Control Level II

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in APPR 230

ARCH 105 Architecture Appreciation

Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4

ARCH 107 Sustainable Site Design

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

2023-2024 Course Descriptions

ARCH 110 Visual Communications I

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in DCTM 101 or concurrently or Architectural Drafting Placement Test 80%
- Placement Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

ARCH 111 Arch Design Fundamentals

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4
- Recommended: ARCH 107 or concurrently

ARCH 113 Materials & Methods of Constr.

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently)
- Placement Score: Reading Level 4 and Writing Level 4

2023-2024 Course Descriptions

ARCH 114 Architectural Drawing/CAD I

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

ARCH 118 Architecture Design/Planning

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (ARCH 110 and ARCH 114)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4

ARCH 120 Visual Communications II

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4

2023-2024 Course Descriptions

ARCH 124 Architectural Drawing/CAD II

Credit Hours: 4 / Billing Hours: 6

As the continuation of Architectural Drawing/Basic CAD I, 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 Score: Reading Level 5 and Writing Level 6 and Math Level 5

ARCH 125 Environmental Systems

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

ARCH 126 Architecture Model Building

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

2023-2024 Course Descriptions

ARCH 176 Special Topic/Architecture P/Z Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

ARCH 218 Commercial Arch Planning Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4

ARCH 220 Commercial Arch Drawing Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4

ARCH 233 Revit Architecture BIM I Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

2023-2024 Course Descriptions

ARCH 235 Arch AutoCAD Independent Study Credit Hours: 1 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

ARCH 243 Revit Architecture BIM II Credit Hours: 4 / Billing Hours: 6

As the continuation of Revit Architecture BIM I, 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 Score: Reading Level 5 and Writing Level 6 and Math Level 5

ARCH 275 Sustainable Building Design Credit Hours: 4 / Billing Hours: 6

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 Course: None Department Approval is required.
- Placement Score: None

ARCH 290 Architectural Internship Credit Hours: 2 to 4 / Billing Hours: 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 Course: None Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

ARCH 295 Arch Independent Study Credit Hours: 1 to 4 / Billing Hours: 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 Course: None Department Approval is required.
- Placement Score: None

ARTH 120 Masterpieces of Art & Music Credit Hours: 4 / Billing Hours: 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 explored. The continuing influence and validity of art and music from the past on contemporary developments will be studied. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)
- Course Note: No art or music background required.

ARTH 211 Art History to the Renaissance Credit Hours: 4 / Billing Hours: 4

This course surveys the history of painting, sculpture, and architecture of world civilizations from preliterate times to the 15th century. It 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 Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

ARTH 212 Art Hist from the Renaissance

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

ARTH 216 Contemporary Art

Credit Hours: 4 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

ARTS 102 Design & Communication

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)
- Recommended: Computer experience
- Course Note:
 - Face-to-Face sections use Adobe Photoshop CC on Macintosh computers.
 - Online, Hybrid, and ORT students are suggested to have semester-long access to Adobe Photoshop CC to complete their assignments.
 - Students may access this software in the LCC TLC Computer

2023-2024 Course Descriptions

ARTS 103 Spatial Dynamics I

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.5 in ARTS 102 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Students purchase own art supplies and materials.

ARTS 131 Drawing I

Credit Hours: 3 / Billing Hours: 4

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 by creating sketches, developmental drawings, and finished imagery. Fundamental elements of drawing and principles of perspective, with a focus on drawing from observation, are covered. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

ARTS 132 Figure Drawing

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.5 in ARTS 131
- Placement Score: Reading Level 5 and Writing Level 6

ARTS 136 Figure Sculpture

Credit Hours: 3 / Billing Hours: 4

A studio course in the 3-Dimensional representation of the human figure. The student will use various modeling tools to sculpt the figure in clay. Projects will include: gestural sketches, anatomical details, and reclining, seated, and standing full-figure poses. Live models will be used. (F,Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 132
- Placement Score: None

2023-2024 Course Descriptions

ARTS 151 Color and Design

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.5 in ARTS 102 and ARTS 131
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - This course uses Photoshop CC on Macintosh computers.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Photoshop CC to complete their assignments.

ARTS 153 Drawing II

Credit Hours: 3 / Billing Hours: 4

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. (F,Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 102 and ARTS 131
- Placement Score: Reading Level 5 and Writing Level 6

ARTS 162 Type Communications

Credit Hours: 3 / Billing Hours: 4

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)

- Prerequisite Course: Minimum 2.5 in ARTS 102 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Illustrator CC.
 - Students have access to this software in the LCC TLC Computer Lab.

2023-2024 Course Descriptions

ARTS 164 Digital Illustration

Credit Hours: 3 / Billing Hours: 4

A creative course involving vector-based illustration software. Students will draw by manipulation of algorithmically created arcs, lines, and curves to form shapes. The focus is on graphics information communication. (F,Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 102 and ARTS 131 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ARTS 162
- Course Note: Online, Hybrid, and ORT students are required to have semester-long access to Adobe Illustrator CC.

ARTS 171 Adobe Photoshop

Credit Hours: 3 / Billing Hours: 4

This course provides an introduction to computer manipulation of digital images using Adobe Photoshop through projects, learning activities, assessments, and exploration of resources. (F,Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 102 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - Adobe Photoshop CC software is used.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Photoshop CC to complete their assignments.
 - Students have access to these in the Lansing Community College TLC Computer Lab.

ARTS 173 Web Design I

Credit Hours: 3 / Billing Hours: 4

This course provides an introduction to web design through projects, learning activities, assessments, and exploration of resources. (F,Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 171 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Online, Hybrid, and ORT students are required to have semester-long access to Adobe Dreamweaver CC to complete their assignments.

2023-2024 Course Descriptions

ARTS 175 Creative Design and Publishing Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.5 in ARTS 102 and ARTS 162 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe InDesign CC.
 - Face-to-face course uses Adobe InDesign CC on Apple computers.

ARTS 179 Web Design II Credit Hours: 3 / Billing Hours: 4

This course continues training and skills learned in Web Design I through projects, learning activities, assessments, and exploration of resources. Students will also learn about the web design workflow including planning, research, content, and creative development. (Sp)

- Prerequisite Course: Minimum 2.0 in ARTS 173
- Placement Score: Reading Level 5 and Writing Level 6

ARTS 183 Design History and Influences Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ARTH 212 (formerly HUMS 212)
- Course Note: Online, Hybrid, and ORT students are required to have semester-long access to Adobe Illustrator or Photoshop CC.

2023-2024 Course Descriptions

ARTS 195 **Employ/Busn Issues for Artists** **Credit Hours: 1 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: None

ARTS 200 **Painting I** **Credit Hours: 3 / Billing Hours: 4**

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 Course: None
- Placement Score: None
- Course Note: Students purchase own art supplies and materials (approx. \$200).

ARTS 201 **Painting II** **Credit Hours: 3 / Billing Hours: 4**

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 Course: Minimum 2.5 in ARTS 200
- Placement Score: None
- Course Note: Students purchase own art supplies and materials (approx. \$200).

ARTS 202 **Design for Innovation** **Credit Hours: 3 / Billing Hours: 4**

Students will explore Design Thinking methodology, focusing on human centered solutions through materials, language, and principles of design. Students will also examine the importance of ethnography, research, prototyping, and testing, and pursue sustainable design solutions for social consciousness. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ARTS 102 or concurrently

2023-2024 Course Descriptions

ARTS 207 Sculpture

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Recommended: Minimum 2.5 in ARTS 103
- Course Note: Students purchase own art supplies and materials.

ARTS 226 Storyboards & Animatics

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.5 in ARTS 151
- Placement Score: Reading Level 5 and Writing Level 6

ARTS 229 Web Design III

Credit Hours: 3 / Billing Hours: 4

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)

- Prerequisite Course: Minimum 2.0 in ARTS 179
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

ARTS 232 Comp Graphics/2-D Animation Credit Hours: 3 / Billing Hours: 4

Creation of 2-D animations using the computer. Emphasis is on the theory and principles of animation. Students will develop an animation of a bipedal character and animated infographics. (F)

- Prerequisite Course: Minimum 2.5 in ARTS 132 and ARTS 151 and ARTS 171
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - This course uses the Adobe Creative Suite on Macintosh computers.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Creative Suite.

ARTS 234 Comp Graphics/3-D Animation I Credit Hours: 3 / Billing Hours: 4

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)

- Prerequisite Course: Minimum 2.5 in ARTS 105 or ARTS 171
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: PHYS 120

ARTS 235 Comp Graphics/3-D Animation II Credit Hours: 3 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 234
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

ARTS 240 Art for Elementary Teachers

Credit Hours: 3 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: EDUC 201 and EDUC 220
- Course Note: EDUC201 and EDUC220 are prerequisites for this course to transfer to Central Michigan University.

ARTS 251 Graphic Design Communications

Credit Hours: 3 / Billing Hours: 4

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)

- Prerequisite Course: Minimum 2.5 in ARTS 164 and ARTS 175
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - This course uses the Adobe CC Suite on Apple computers.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Creative Suite.

ARTS 252 Graphic Design Publications

Credit Hours: 3 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: Minimum 2.5 in ARTS 251
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - This course uses the Adobe CC Suite on Apple computers.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Creative Suite.

2023-2024 Course Descriptions

ARTS 253 Graphic Design Branding

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.5 in ARTS 251
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - This course uses the Adobe CC Suite on Apple computers.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Creative Suite.

ARTS 269 The Portfolio

Credit Hours: 2 / Billing Hours: 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 Course: None. Department Approval is Required
- Placement Score: 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.

ARTS 281 Art Internship

Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

ASTR 201 Introductory Astronomy Credit Hours: 4 / Billing Hours: 5

A survey course of astronomy. Topics include the celestial sphere, apparent motions, and orbital mechanics; the nature of and interaction between matter and light, spectroscopy, and astronomical instrumentation; the Earth, the Moon, the Sun, the solar system and exoplanets; stellar characteristics and evolution, nucleosynthesis; and galaxies and cosmology. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 5 or (MATH 109 concurrently)]
- Recommended: It is recommended that students taking ASTR 201 have taken a High School Physics or Physical Science course.

AUTB 106 Refinishing I Credit Hours: 5 / Billing Hours: 8

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3

AUTB 107 Non-Structural Repair I Credit Hours: 5 / Billing Hours: 8

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3

AUTB 114 Collision Repr Welding/Cutting Credit Hours: 3 / Billing Hours: 5

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3

2023-2024 Course Descriptions

AUTB 136 Refinishing II

Credit Hours: 5 / Billing Hours: 8

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 Course: Minimum 2.0 in (AUTB 106 or AUTB 118)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3 and Department Approval Course
- Course Note: For students wishing to enroll in this course, please call 517-483-5338 for Department Approval.

AUTB 137 Non-Structural Repair II

Credit Hours: 5 / Billing Hours: 8

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 Course: Minimum 2.0 in (AUTB 107 and (AUTB 114 or concurrently))
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3 and Department Approval

AUTB 150 Struct Analysis/Damage Repr I

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in ((AUTB 106 or AUTB 118) and AUTB 107 and AUTB 114)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4 and Department Approval

2023-2024 Course Descriptions

AUTM 102 Automotive/Collision Safety

Credit Hours: 1 / Billing Hours: 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 Course: None
- Placement Score: 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 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.

AUTM 111 Automotive Electrical I

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [(AUTM 102 or concurrently) or AUTM 101]
- Placement Score: 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 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.

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

AUTM 112 Battery/Start/Charge Systems

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in ((AUTM 110 or concurrently) or AUTO 111)
- Placement Score: 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.
 - Books are included as part of the course fee.

AUTM 113 Automotive Electrical II

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110]
- Placement Score: 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 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.

2023-2024 Course Descriptions

AUTM 125 Manual Drive Train and Axles

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [(AUTM 102 or concurrently) or AUTM 101]
- Placement Score: 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 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.

AUTM 126 Automatic Transmissions

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110]
- Placement Score: 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 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.

2023-2024 Course Descriptions

AUTM 131 Automotive Engine Repair

Credit Hours: 4 / Billing Hours: 6

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. (Sp)

- Prerequisite Course: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110]
- Placement Score: 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 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.

AUTM 141 Braking Systems and ABS

Credit Hours: 4 / Billing Hours: 6

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)

- Prerequisite Course: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110]
- Placement Score: 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 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.

2023-2024 Course Descriptions

AUTM 151 Suspension and Steering

Credit Hours: 4 / Billing Hours: 6

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)

- Prerequisite Course: Minimum 2.0 in [(AUTM 111 or concurrently) or AUTM 110]
- Placement Score: 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 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.

AUTM 161 Auto Heating/Air Conditioning

Credit Hours: 4 / Billing Hours: 6

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. (Sp)

- Prerequisite Course: Minimum 2.0 in [(AUTM 111 or concurrently) or (HERT 125 or concurrently) or AUTM 110]
- Placement Score: 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 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.

2023-2024 Course Descriptions

AUTM 180 Intro to Alternative Fuels

Credit Hours: 2 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]

AUTM 185 Automotive Special Topics

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

AUTM 211 Automotive Electrical III

Credit Hours: 4 / Billing Hours: 6

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. (Sp)

- Prerequisite Course: Minimum 2.0 in (AUTM 113 or concurrently)
- Placement Score: 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 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.

2023-2024 Course Descriptions

AUTM 270 Gas Eng Drivability Diagnosis

Credit Hours: 4 / Billing Hours: 6

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)

- Prerequisite Course: Minimum 2.0 in [(AUTM 211 or concurrently) or AUTM 210]
- Placement Score: 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.
 - Books are included as part of the course fee.
 - \$35 of the Course Fee is non-refundable.

AUTM 273 Lt. Diesel Drivability Diag.

Credit Hours: 4 / Billing Hours: 6

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 Score: 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.
 - Books are included as part of the course fee.
 - \$35 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

AUTM 275 Ignition/Emission Sys Diag.

Credit Hours: 4 / Billing Hours: 6

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 Score: 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.
 - Books are included as part of the course fee.
 - \$35 of the Course Fee is non-refundable.

AUTM 280 Electric/Fuel Cell Technology

Credit Hours: 2 / Billing Hours: 2.5

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 Course: Minimum 2.0 in [AUTM 180 and (AUTM 270 or concurrently)]
- Placement Score: 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.
 - \$40 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

AUTM 284 Hybrid Systems & Maintenance **Credit Hours: 4 / Billing Hours: 6**

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 Course: Minimum 2.0 in (AUTM 180 and AUTM 270)
- Placement Score: 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.

AUTM 286 High Voltage Battery Tech **Credit Hours: 4 / Billing Hours: 6**

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 Course: Minimum 2.0 in (AUTM 180 and AUTM 270)
- Placement Score: 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.

AUTM 288 High Voltage Management **Credit Hours: 4 / Billing Hours: 7**

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 Course: Minimum 2.0 in (AUTM 286 or concurrently)
- Placement Score: 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.

2023-2024 Course Descriptions

AUTM 290 Automotive Internship **Credit Hours: 1 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

AUTM 296 Automotive Independent Study **Credit Hours: 1 to 4 / Billing Hours: 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 project. (F, Sp, Su)

- Prerequisite Course: None. Department Approval is required.
- Placement Score: None

AUTM 298 Automotive Service Laboratory **Credit Hours: 2 to 6 / Billing Hours: 4 to 9**

This laboratory course is designed to provide work experience and develop trade-entry skills in general and light-line repair. (Su)

- Prerequisite Course: None. Department Approval is required.
- Placement Score: None

AUTM2 82 Gaseous Fuels **Credit Hours: 3 / Billing Hours: 4**

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 Course: Minimum 2.0 in [AUTM 180 and (AUTM 270 or concurrently)]
- Placement Score: 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.
 - \$40 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

AVAF 125 Aircraft Systems I

Credit Hours: 2 / Billing Hours: 2.75

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 126 Aircraft Systems II

Credit Hours: 6 / Billing Hours: 8.25

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 127 Aircraft Systems III

Credit Hours: 3 / Billing Hours: 4

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 134 Aircraft Instruments

Credit Hours: 2 / Billing Hours: 2.75

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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AVAF 140 Aircraft Welding

Credit Hours: 2 / Billing Hours: 3

Presents welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aviation maintenance techniques. (Sp)

- Prerequisite Course: None. Department Approval is required.
- Placement Score: 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.

AVAF 208 Aircraft Structures I

Credit Hours: 4 / Billing Hours: 5.5

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 209 Aircraft Structures II

Credit Hours: 4 / Billing Hours: 5.75

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 210 Aircraft Structures III

Credit Hours: 4 / Billing Hours: 6

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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AVAF 211 Aircraft Electrical I

Credit Hours: 4 / Billing Hours: 5.75

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 212 Aircraft Electrical II

Credit Hours: 4 / Billing Hours: 5.75

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 Course: None. Department Approval is required.
- Placement Score: None

AVAF 246 Airframe Certification

Credit Hours: 1 / Billing Hours: 1.5

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 Course: None. Department Approval is required.
- Placement Score: None

AVAU 100 UAS Exam - Flight Orientation

Credit Hours: 2 / Billing Hours: 2.5

This course covers the fundamentals of unmanned aircraft systems (UAS) pertaining to UAS regulations, National Airspace restrictions, weather effects, UAS performance, human factors, operational pre-flight activities and in-flight control, recordkeeping, and logbooks. This course will prepare the student for the Title 14 CFR Part 107 FAA written examination. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

AVAU 150 Unmanned Aircraft Sys. Maint. Credit Hours: 2 / Billing Hours: 3

This course will concentrate on the proper maintenance and repair of the components of unmanned aircraft systems (UAS). Students will learn operator maintenance, inspections, battery systems and maintenance, communication and instrumentation systems, rigging and assembly, and electrical troubleshooting. Students will gain the knowledge to identify technical problems associated with UAS. (F)

- Prerequisite Course: Minimum 2.0 in AVAU 100 or concurrent
- Placement Score: Reading Level 5 and Math Level 4.

AVAU 200 Advanced UAS Flight - Capstone Credit Hours: 2 / Billing Hours: 3

This Capstone course provides an in-depth review of the UAS program content. Students will present examples of program-related tasks to faculty and peers. Students will demonstrate skills learned throughout the program, including in a variety of drone missions for potential future clients. Drone flight is included in class laboratory sessions. (Sp)

- Prerequisite Course: Minimum 2.0 in AVAU 100
- Placement Score: Reading Level 5 and Writing Level 4

AVEL 202 Flight Line Testing Credit Hours: 3 / Billing Hours: 4

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 Course: None. Department Approval is required.
- Placement Score: None

AVGM 111 Aviation General I Credit Hours: 4 / Billing Hours: 5

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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AVGM 112 Aviation General II

Credit Hours: 6 / Billing Hours: 8

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 Course: None. Department Approval is required.
- Placement Score: None

AVGM 113 Aviation General III

Credit Hours: 4 / Billing Hours: 5

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 Course: None. Department Approval is required.
- Placement Score: None

AVGM 114 Materials and Processes

Credit Hours: 5 / Billing Hours: 7

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 241 Reciprocating Engine

Credit Hours: 8 / Billing Hours: 11.25

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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AVPP 251 Reciprocating Engine Systems

Credit Hours: 2 / Billing Hours: 2.5

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 253 Reciprocating Ignition Systems

Credit Hours: 5 / Billing Hours: 6.75

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 255 Reciprocating Induction Sys

Credit Hours: 4 / Billing Hours: 5.5

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 257 Aircraft Propeller Systems

Credit Hours: 4 / Billing Hours: 5.5

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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AVPP 259 Turbine Engine I

Credit Hours: 4 / Billing Hours: 5.5

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 261 Turbine Engine II

Credit Hours: 4 / Billing Hours: 5.5

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 263 Turbine Engine Systems

Credit Hours: 2 / Billing Hours: 2.75

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 Course: None. Department Approval is required.
- Placement Score: None

AVPP 265 Powerplant Instruments

Credit Hours: 2 / Billing Hours: 2.5

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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

AVPP 267 Powerplant Certification

Credit Hours: 1 / Billing Hours: 1.5

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 Course: None. Department Approval is required.
- Placement Score: None

BIOL 120 Environmental Science

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (NCAS 102 and ENGL 121 concurrently)
- Course Note:
 - 1) The course fee for this course includes the price of the electronic textbook and web access from Cengage publishers. You do not need to purchase an additional textbook. If you want to purchase printed loose-leaf pages of the textbook, you may purchase them at a discount from Cengage once class has started.
 - 2) An online course also has some labs requiring students to physically tour a field lab facility or to do simple experiments at home.

2023-2024 Course Descriptions

BIOL 121 **Biol Foundation for Physiology** **Credit Hours: 4 / Billing Hours: 6**

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 Course: None
- Placement Score: 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

BIOL 125 **Introductory Biology** **Credit Hours: 4 / Billing Hours: 6**

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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

BIOL 127 **Cell Biology** **Credit Hours: 4 / Billing Hours: 6**

Lecture topics include the biochemistry 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 Course: Minimum 2.0 in [CHEM 120 or (CHEM 151 or concurrently)]
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

2023-2024 Course Descriptions

BIOL 128 Organismal Biology

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

BIOL 145 Intro Anatomy and Physiology

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

BIOL 201 Human Anatomy

Credit Hours: 4 / Billing Hours: 6

A lecture and laboratory study of the anatomy of the human body that includes the structures of the integumentary, skeletal, muscular, nervous, cardiovascular, lymphatic, respiratory, digestive, urinary, endocrine, and reproductive systems. Designed for students preparing for allied health professions. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: 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)
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

BIOL 202 Human Physiology

Credit Hours: 4 / Billing Hours: 5

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 professions and other life sciences. (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 Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

BIOL 203 Microbiology

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: 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).
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

BIOL 204 Microbiology Laboratory

Credit Hours: 1 / Billing Hours: 3

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 Course: Minimum 2.0 in BIOL 203 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 5 or minimum 2.0 in (MATH 109) or (MATH 119 or STAT 170) concurrently]

BIOL 210 Natural Resource Conservation

Credit Hours: 4 / Billing Hours: 6

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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

BIOL 260 Botany

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 Recommended: One semester of college-level biology

2023-2024 Course Descriptions

BIOL 265 Zoology

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: 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

BIOL 270 Human Genetics

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: 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: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

BIOL 275 Molecular Biology I

Credit Hours: 4 / Billing Hours: 6

Introduces core principles of molecular biology and biochemistry of DNA/RNA structure, gene expression, function and replication, Polymerase Chain Reaction, and recombinant DNA technology. Laboratory training emphasizes reagent preparation, culturing bacteria, isolating and purifying bacterial and plasmid DNA, restriction enzyme digests, agarose gel electrophoresis, and bioinformatics. Current trends in Molecular Biology will be explored. This is the first course in a 2-course sequence. (F)

- Prerequisite Course: Minimum 2.0 in BIOL 127 and CHEM 151 and CHEM 161
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

BIOL 276 Molecular Biology II Credit Hours: 4 / Billing Hours: 6

Continuation of BIOL 275. Advanced lecture and laboratory topics in molecular biology and biochemistry in gene analysis, gene sequencing, and applications of molecular biotechnology. Laboratory activities include gene cloning and genome editing experiments, and molecular analysis of protein structure and function. This is the second course in a 2-course sequence. (Sp)

- Prerequisite Course: Minimum 2.0 in BIOL 275
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

BLDT 120 Structural Framing Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently)
- Placement Score: Reading Level 4 and Writing Level 4 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

BLDT 130 Building Exterior Construction Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102) or concurrently
- Placement Score: 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

2023-2024 Course Descriptions

BLDT 140 Building Interior Construction

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (DCTM 102 or ELTE 102 or HVAC 102 or METS 102 or WELD 102 or concurrently)
- Placement Score: 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)

BLDT 150 Intro Masonry/Concrete Const

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 4 and [Math Level 3 or minimum 2.0 in (MATH 105 or MATH 106)]

BLDT 160 Steel Framing

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: 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

2023-2024 Course Descriptions

BLDT 170 Special Topics in Construction Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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)

- Prerequisite Course: Determined by Section

BLDT 171 Special Topic/Construction P/Z Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

BLDT 180 Builder Pre-Licensure Prep Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: 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.

2023-2024 Course Descriptions

BLDT 285 Residential Bldg Internship Credit Hours: 2 to 4 / Billing Hours: 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 Course: Minimum 2.0 in (BLDT 120 or BLDT 121). Departmental Approval is required.
- Placement Score: None
- Course Note: Restriction: Building Construction Majors

BUSN 118 Introduction to Business Credit Hours: 3 / Billing Hours: 3

Introduction to principles, problems, and practices related to the world of business. Topics covered include: business management and organization, marketing, finance, economics, supply chain management, and international business. Application of these topics will be done through critical thinking of weekly application assignments, quizzes, and online discussion questions. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)
- Course Note:
 - Some sections of BUSN 118 allow concurrent enrollment in ENGL 098 and NCAS 105.
 - See an academic advisor for sections that allow concurrent enrollment with ENGL 098 and NCAS 105.

BUSN 150 Legal Issues: Start Small Busn Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

BUSN 160 Starting a Business

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4 and Math Level 4

BUSN 201 International Business

Credit Hours: 3 / Billing Hours: 3

Students will analyze the conditions in multiple countries and develop and evaluate present and future SWOT analysis for international business activities. Students will also analyze the relationship between international businesses and institutions and the political, economic, legal, financial management, human resource, and social policies of countries to develop strategies for successful decision-making. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Recommended: BUSN 118

BUSN 250 Personal Finance

Credit Hours: 3 / Billing Hours: 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 be used to apply the materials covered in this course. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 5

2023-2024 Course Descriptions

BUSN 251 Understanding Investments

Credit Hours: 3 / Billing Hours: 3

Study of securities markets which will include an introduction to various types of investments such as mutual funds, real estate, money markets, stocks, bonds, and IRAs. Practice will be conducted to develop an understanding of terminology and application of concepts. Time Value of Money and some of the more prevalent theories, concepts, and skills of investing will be covered to aid in developing strategies for making sound investment decisions. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and [Math Level 5 or minimum 2.0 in (MATH 105 or MATH 106)]

BUSN 260 Starting a Business

Credit Hours: 4 / Billing Hours: 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,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 4

BUSN 285 Business Admin Internship

Credit Hours: 2 to 5 / Billing Hours: 2 to 5

The Business Admin Internship is an opportunity for students to work with Lansing area businesses as a team member to explore various careers within the industry. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in BUSN 118
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

CHDV 100 Foundations Early Childhood Ed Credit Hours: 3 / Billing Hours: 3

In this course students are introduced to the field of early childhood education. Students will explore the basic principles and practices of teaching young children. Topics include professionalism, creating effective learning environments, influences on children's learning, observation and assessment, and how children learn through play. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 or NCSS 101 concurrently) and Writing Level 4
- Recommended: Child Development and Early Education Major
- Course Note: 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.

CHDV 101 Child Growth/Develop: 0-12 Yrs Credit Hours: 4 / Billing Hours: 4

This course examines the growth and development patterns of children through age twelve in physical, social, emotional, cognitive and language development. This includes the influences of environmental factors which impact development. Students acquire skills in observing and recording child behavior. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 or NCSS 101 concurrently) and Writing Level 4

2023-2024 Course Descriptions

CHDV 111 Child Guidance/Communication **Credit Hours: 4 / Billing Hours: 4**

This course includes field experience. Students learn interaction skills and environmental structures that foster social and emotional growth in children in early childhood education. 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 Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4
- Course Note:
 - All students must register for 4 hours/week at an approved (by CHDV program) weekday daytime field experience site by [emailing](mailto:jordanh@star.lcc.edu) (jordanh@star.lcc.edu).
 - Students must pass an [ICHAT](#) criminal background check and a State of Michigan Central Registry Clearance prior to beginning field experience.
 - Students may be required to submit proof of vaccinations, including COVID, prior to beginning field experience.
 - Students who have not submitted required documentation by the second week of the semester may be dropped from the course.
 - In addition to regular class time, students are required to complete training online required for field experience. Information will be distributed via the course management site.
 - To complete an Associate Degree or Certificate in Child Development and Early Education in the shortest possible time, students must enroll in CHVD 100 and CHDV 111 in their first semester.

CHDV 122 Creativity and Play **Credit Hours: 1 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4

2023-2024 Course Descriptions

CHDV 123 Literacy and Play

Credit Hours: 1 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4

CHDV 124 Young Investigators: Math/Sci

Credit Hours: 1 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4
- Recommended: Experience in Early Childhood Education and Care

CHDV 126 Discovery Learning:Inf/Tod Gps

Credit Hours: 1 / Billing Hours: 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. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4

2023-2024 Course Descriptions

CHDV 129 Caring for Youngest Learners

Credit Hours: 2 / Billing Hours: 2

This course explores developmentally appropriate infant and toddler caregiving practices that support and nurture social-emotional development and learning for children under the age of three. It is designed as an introductory course for those who care for and work with infants and toddlers. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4

CHDV 132 Leadership Early Childhood Ed

Credit Hours: 2 / Billing Hours: 2

This course introduces students to effective leadership skills in early childhood education. Topics include leadership styles, communication skills, conflict resolution, interpersonal skills, and team-building in the workplace. Students will engage in self-reflection as they explore ethics, equity, and social justice in early childhood education. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4

2023-2024 Course Descriptions

CHDV 215 Infant Toddler Program Dev

Credit Hours: 4 / Billing Hours: 4

This course includes field experience. Students will explore the social-emotional and physical environments needed for quality early education and care for infants and toddlers. Focus includes developing positive interactions, building relationships, developmentally appropriate activities and materials, managing routines, and observation skills. (F,Sp)

- Prerequisite Course: Minimum 2.5 in CHDV 100 and CHDV 101 and (CHDV 111 within 5 years)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - All students must register for 4 hours/week at an approved (by CHDV program) weekday daytime field experience site by [emailing \(jordanh@star.lcc.edu\)](mailto:jordanh@star.lcc.edu).
 - Students must pass an [ICHAT](#) criminal background check and a State of Michigan Central Registry Clearance prior to beginning field experience.
 - Students may be required to submit proof of vaccinations, including COVID, prior to beginning field experience.
 - Students who have not submitted required documentation by the second week of the semester may be dropped from the course.
 - In addition to regular class time, students are required to complete training online required for field experience. Information will be distributed via the course management site.

2023-2024 Course Descriptions

CHDV 220 Preschool Curriculum Approach Credit Hours: 4 / Billing Hours: 4

This course, with fieldwork, explores developmentally appropriate curriculum in various content areas in preschool-age early education settings. Students explore play-based learning and curriculum development that support children's individual growth and development. Other topics include learning environments and materials; observation, documentation and assessment; and planning and evaluating learning experiences. (F,Sp)

- Prerequisite Course: Minimum 2.5 in [CHDV 100 and CHDV 101 and (CHDV 111 within 5 years)]
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - All students must register for 4 hours/week at an approved (by CHDV program) weekday daytime field experience site by [emailing](mailto:jordanh@star.lcc.edu) (jordanh@star.lcc.edu).
 - Students must pass an [ICHAT](#) criminal background check and a State of Michigan Central Registry Clearance prior to beginning field experience.
 - Students may be required to submit proof of vaccinations, including COVID, prior to beginning field experience.
 - Students who have not submitted required documentation by the 2nd week of the semester may be dropped from the course.
 - In addition to regular class time, students may be required to complete training online required for field experience. Information will be distributed via the course management site.

CHDV 222 Caring for School-Age Children Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4

2023-2024 Course Descriptions

CHDV 225 Families and Inclusion

Credit Hours: 4 / Billing Hours: 4

This course examines inclusion and family partnerships in early childhood education. It includes: benefits of inclusion and early intervention, strategies to build partnerships with families, dynamics of diverse families, and the role of the early childhood educator as a partner with families to promote learning and development. (F,Sp)

- Prerequisite Course: Minimum 2.5 in CHDV 215 (previously CHDV 221) or CHDV 220
- Placement Score: Reading Level 5 and Writing Level 6

CHDV 230 Early Childhood Program Admin

Credit Hours: 3 / Billing Hours: 3

This course examines the administrative and leadership role of managing an early childhood education program, including state licensed child care homes, group homes and centers. The focus is on identifying effective leadership and management strategies, policies, and procedures required for the operation of a quality early childhood education program. (F,Sp,Su)

- Prerequisite Course: Minimum 2.5 in CHDV 111
- Placement Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

CHDV 284 Early Childhood Practicum

Credit Hours: 5 / Billing Hours: 5

This course includes field experience. Students will plan and implement developmentally appropriate learning experiences to support each and every child in an early childhood setting. An emphasis is placed on the development of professional skills for working with colleagues, children, and families. (F,Sp)

- Prerequisite Course: Minimum 2.5 in [CHDV 215 (previously CHDV 221) and CHDV 220] and [CHDV 225 (previously CHDV 112) or concurrently]
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - All students must register for 8 hours/week at an approved (by CHDV program) weekday daytime fieldwork site by [emailing](mailto:jordanh@star.lcc.edu) (jordanh@star.lcc.edu).
 - Students must pass an [ICHAT](#) criminal background check and a State of Michigan Central Registry Clearance prior to beginning fieldwork.
 - Students must submit proof of Covid vaccination and a TB Test prior to beginning field experience.
 - Students who have not submitted proof of a completed ICHAT, Central Registry Clearance, negative TB Test, and Covid vaccination by the 2nd week of the semester may be dropped from the course.

In addition to regular class time, students may be required to complete training online required for field experience. Information will be distributed via the course management site.

CHDV 297 Child Dev Directed/Indep Study **Credit Hours: .25 to 4 / Billing Hours: .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.
- Placement Score: None

2023-2024 Course Descriptions

CHEM 120 Gen Organic & Biological Chem

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

CHEM 125 Basic Chemistry

Credit Hours: 4 / Billing Hours: 4

Intended for students who have not had high school chemistry or who require a refresher course. Measurement, problem solving, chemical formulas, states of matter, chemical equations, stoichiometry, atomic structure, chemical bonding, gas laws, solutions, and acids and bases are emphasized. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and (Math Level 5 or concurrent enrollment in MATH 109)
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

CHEM 130 Biochemistry

Credit Hours: 4 / Billing Hours: 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 Courses: Minimum 2.0 in CHEM 120 or CHEM 125 or CHEM 151
- Placement Scores: Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106)

2023-2024 Course Descriptions

CHEM 135 **Chemistry in Society**

Credit Hours: 4 / Billing Hours: 5

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

CHEM 151 **General Chemistry Lecture I**

Credit Hours: 4 / Billing Hours: 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, chemical formulas and equations, states of matter, aqueous solutions and reactions, stoichiometry, thermochemistry, atomic structure, bonding, chemical equilibrium, and acids and bases. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: 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
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

CHEM 152 General Chemistry Lecture II

Credit Hours: 3 / Billing Hours: 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, and molecular orbitals. (F,Sp,Su)

- Prerequisite Course: Reading Level 5 and Writing Level 6 and (Minimum 2.0 in CHEM 151 and [Math Level 7 or minimum 2.0 in MATH 126 or concurrently]) or (Minimum 3.5 in CHEM 151 and [Math Level 7 or minimum 2.0 in Math 120 or concurrently])
- Course Note:
 - A scientific calculator capable of scientific notation and log functions is required for this course.
 - This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

CHEM 161 General Chemistry Lab I

Credit Hours: 1 / Billing Hours: 3

Laboratory course designed to complement CHEM151. Stresses basic laboratory techniques, writing lab reports, and critical thinking exercises. Topics include density determination, thin layer chromatography, distillation, synthesis, empirical formulas, calorimetry, molecular geometry, gas laws, chemical equilibrium, pH, and water hardness. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in CHEM 151 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 6 or (MATH 109 or MATH 112) or concurrently]

CHEM 162 General Chemistry Lab II

Credit Hours: 1 / Billing Hours: 3

Laboratory course designed to complement CHEM 152. CHEM 162 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 Course: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 7

996

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CHEM 182 Introductory Organic Chemistry Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 Recommended: Minimum 2.0 in CHEM 151

CHEM 192 Intro Organic Chem Lab Credit Hours: 1 / Billing Hours: 3

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 Course: Minimum 2.0 in CHEM 182 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6 Recommended: CHEM 151

CHEM 251 Organic Chemistry Lecture I Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in CHEM 151
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: Minimum 2.0 in CHEM 152

CHEM 252 Organic Chemistry Lecture II Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in CHEM 251
- Placement Score: Reading Level 5 and Writing Level 6

997

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

CHEM 262 Quantitative Analysis

Credit Hours: 3 / Billing Hours: 6

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 Course: Minimum 2.0 in (CHEM 152 and CHEM 162)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 7

CHEM 272 Organic Chemistry Laboratory

Credit Hours: 2 / Billing Hours: 6

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 Course: Minimum 2.0 in CHEM 251
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: CHEM 252 concurrently

CHSE 100 Intro to Health Professions

Credit Hours: 3 / Billing Hours: 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 drug dose calculations and medical terminology. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4
- Course Note: In addition to regular class time, students are required to complete Bloodborne Pathogens and HIPAA training online. Information will be distributed via the course D2L site.

2023-2024 Course Descriptions

CHSE 108 Long-Term Care Nurse Aide Credit Hours: 4 / Billing Hours: 6.5

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 Score: Reading Level 5 and Writing Level 4
- Course Note: This course provides training for CNA testing, nursing home, and Home Health Aide. Required for clinical:
 - 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 (credit card required), results to be submitted on first day of course.
 - 4. Proof of required immunizations.
 - 5. Students MUST meet physical requirements for the duration of course as specified in course syllabus.
 - 6. Students will be charged a \$20 fee for ACEMAPP required documentation/testing.

CHSE 114 Pathophysiology-Allied Health Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

CHSE 117 Health Law and Ethics Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

CHSE 119 Community Health Career Topics Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

CHSE 120 Medical Terminology Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

CHSE 123 Medical Ins Billing/Coding I Credit Hours: 4 / Billing Hours: 4

This course introduces insurance billing and diagnostic and procedure coding using the International Classification of Diseases (ICD-10-CM), 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 Score: Reading Level 5 and Writing Level 4
- Corequisite Course: CHSE 131 (three-semester cohort); None (four-semester cohort)

2023-2024 Course Descriptions

CHSE 124 Medical Ins Billing/Coding II

Credit Hours: 4 / Billing Hours: 4

The course provides comprehensive billing directions for BCBS (Blue Cross Blue Shield), Medicare, Medicaid, commercial insurances including HMOs, managed care, and worker's compensation. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in [(CHSE 120 and CHSE 123) and (CHSE 131 or concurrently)]
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: CHSE 125 and CHSE 127 (three-semester cohort); CHSE 131 (four-semester cohort)

CHSE 125 Comp-Med Ins Billing/Coding

Credit Hours: 2 / Billing Hours: 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-CM (International Classification of Diseases, Tenth Revision, Clinical Modification), and CPT (Current Procedure Terminology) coding; produce claim forms and patient statements; and build office databases. (F,Sp)

- Prerequisite Course: Minimum 2.5 in [(CHSE 120 and CHSE 123) and (CHSE 124 or concurrently)]
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: CHSE 124 and CHSE 127 (three-semester cohort); CHSE 127 (four-semester cohort)

CHSE 127 Medical Ins Billing/Coding III

Credit Hours: 3 / Billing Hours: 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-CM, ICD-10-PCS, CPT, and HCPCS 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. (F,Sp)

- Prerequisite Course: Minimum 2.5 in [CHSE 120 and CHSE 123 and (CHSE 124 or concurrently) and (CHSE 125 or concurrently)]
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: CHSE 124 and CHSE 125 (three-semester cohort); CHSE 125 (four-semester cohort)

1001

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

CHSE 130 Medical Ins Bill/Code Extern

Credit Hours: 3 / Billing Hours: 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. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in (CHSE 120 and CHSE 123 and CHSE 124 and CHSE 125 and CHSE 127 and CHSE 131). Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 4
- Course Note: Required:
 - 1) Minimum age of 18 required to enroll in this course.
 - 2) Completion of Bloodborne Pathogens and HIPAA Training online; information given at orientation.
 - 3) Negative 2-step TB (tuberculosis) skin test within the last year.
 - 4) Students must pass an [ICHAT](#) criminal background check (credit card required) prior to worksite placement; information given at orientation.
 - 5) Students will be charged a \$20 fee for ACEMAPP required documentation/testing.

Contact the CHSE Externship Coordinator at 517-483-1410 to obtain program approval to enroll in this course.

CHSE 131 Electronic Hlth Records Intro

Credit Hours: 2 / Billing Hours: 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,Su)

- Prerequisite Course: Minimum 2.5 in CHSE 120 or concurrently
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: CHSE 123 (three-semester cohort); CHSE 124 (four-semester cohort)

1002

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

CHSE 136 EKG Technician

Credit Hours: 3.5 / Billing Hours: 4

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 Score: Reading Level 5 and Writing Level 4
- Course Note: Required:
 - Completion of Bloodborne Pathogens & HIPAA Training online; information given at first class session.
 - \$44 of the course fee is for medical supplies and is non-refundable.
 - Students will be charged a \$20 fee for ACEMAPP required documentation/testing.

CHSE 139 Community Health Career Topics Credit Hours: .25 to 8 / Billing Hours: 0 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

2023-2024 Course Descriptions

CHSE 143 Phlebotomy Technician

Credit Hours: 2 / Billing Hours: 3

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 Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4
- Course Note: Required:
 - 1) Completion of Bloodborne Pathogens Training online; information will be distributed via the course D2L site and/or in class.
 - 2) Students will be charged a \$50 fee for ACEMAPP required documentation/testing. The ACEMAPP fee covers both CHSE 143 and CHSE 144 if taken within the same calendar year.

CHSE 144 Phlebotomy Externship

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4
- Course Note: Students will be charged a \$50 fee for ACEMAPP required documentation. Required:
 - 1) Minimum age of 18 required to enroll in this course.
 - 2) Completion of Bloodborne Pathogens and HIPAA training online; information given at orientation.
 - 3) Negative 2-step (tuberculosis) skin test within the last year.
 - 4) Students must pass an [ICHAT](#) criminal background check prior to worksite placement; information given at orientation.
 - 5) Additional arranged hours are required for online discussion board.
 - Contact the CHSE Externship Coordinator at 517-483-1410 to obtain program approval to enroll in this course.

1004

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

CHSE 150 CHSE Directed/Indep Study Credit Hours: .25 to 4 / Billing Hours: .25 to 7

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: None. Program Approval is required.
- Placement Score: None

CHSE 151 Patient Care Technician Credit Hours: 6 / Billing Hours: 9.25

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 Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 4
- Corequisite Course: NCHE 102
- Course Note: Provides training for national PCT certification and hospital. Students will be charged a \$50 fee for ACEMAPP required documentation. Required:
 - 1) Minimum age of 18 required to enroll in this course.
 - 2) Completion of Bloodborne Pathogens, HIPAA & Sparrow online training; information given first day of class.
 - 3) Negative 2-step TB (tuberculosis) tests within the last year.
 - 4) Students must pass an [ICHAT](#) criminal background check (credit card required). Results of ICHAT to be submitted on first day of course.
 - 5) Proof of required immunizations.
 - 6) Students MUST meet physical requirements for the duration of course as specified in course syllabus.

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2023-2024 Course Descriptions

CHSE 235 Pharmacy Technician

Credit Hours: 4 / Billing Hours: 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 for the technical portion of the Pharmacy Technician Certification Board National Certification Exam. Review of certification and exam requirements, along with additional prerequisites, will be needed prior to taking the exam. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 4
- Corequisite Course: NCHE 102
- Course Note: Minimum age of 18 required to enroll in this course.

CHSE 236 Pharmacy Technician Externship

Credit Hours: 3 / Billing Hours: 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 required to attend lectures which cover professionalism, resume writing, and interviewing skills. (F,Sp,Su)

- Prerequisite Course: Minimum 2.5 in CHSE 235 within 1 year. Program Approval required.
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 4
- Course Note: Required:
 - 1) Minimum age of 18 required to enroll in this course.
 - 2) Completion of Bloodborne Pathogens and HIPAA Training online; information given at orientation.
 - 3) Negative 2-step TB (tuberculosis) skin test within the last year.
 - 4) Students must pass an [ICHAT](#) criminal background check (credit card required) prior to worksite placement; information given at orientation.
 - 5) Students will be charged a \$50 fee for ACEMAPP required documentation.

Contact the CHSE Externship Coordinator at 517-483-1410 to obtain Program Approval to enroll in this course.

1006

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2023-2024 Course Descriptions

CITA 110 Intro to Microsoft Office

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4
- Recommended: Windows and keyboarding experience
- Course Note: 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](#).

1007

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2023-2024 Course Descriptions

CITA 115 Microsoft PowerPoint

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4
- Recommended: Windows and keyboarding experience
- Course Note: 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. 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 CITA 115 PowerPoint, CITA 133 Access, CITA 126 Excel, and CITA 226 Advanced Excel. CITA 119 Word and CITA 219 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.

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2023-2024 Course Descriptions

CITA 126 Microsoft Excel

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5
- Recommended: Windows and keyboarding experience
- Course Note: 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 CITA 115 PowerPoint, CITA 133 Access, CITA 126 Excel, and CITA 226 Advanced Excel. CITA 119 Word and CITA 219 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.

2023-2024 Course Descriptions

CITA 133 Microsoft Access Database

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4
- Recommended: Windows and keyboarding experience
- Course Note: 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 CITA 115 PowerPoint, CITA 133 Access, CITA 126 Excel, and CITA 226 Advanced Excel. CITA 119 Word and CITA 219 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.

1010

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2023-2024 Course Descriptions

CITA 140 Microsoft Outlook

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4
- Recommended: Windows and keyboarding experience
- Course Note: 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](#).

1011

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

CITA 219 **Advanced Microsoft Word**

Credit Hours: 3 / Billing Hours: 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 Note: 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.

1012

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2023-2024 Course Descriptions

CITA 226 Microsoft Excel-Advanced

Credit Hours: 3 / Billing Hours: 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 Note: 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.

1013

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

CITA 229 Special Topics in Applications **Credit Hours: .25 to 6 / Billing Hours: .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)

- Prerequisite Course: Determined by Section

CITA 119 Microsoft Word **Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4
- Corequisite Course:
- Recommended: Windows and keyboarding experience
- Course Note: 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 CITA 119 Word and CITA 219 Advanced Word. CITA 115 PowerPoint, CITA 133 Access, CITA 126 Excel, and CITA 226 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.

1014

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITC 282 Ethical Hacking

Credit Hours: 3 / Billing Hours: 3

This course provides an in-depth understanding of hacking phases, various attack vectors, and preventative countermeasures. Content will include how hackers think and act maliciously, allowing students to be better positioned to set up security infrastructure and defend against future attacks. This course will prepare students for the CompTIA Pentest+ certification. (F, Sp)

- Prerequisite Course: Minimum 2.0 in CITN 280
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITC 285 System Defense

Credit Hours: 3 / Billing Hours: 3

This course will provide students with targeted content and integrated hands-on skills for applying behavioral analytics to networks and devices to prevent, detect, and combat cybersecurity threats through continuous security monitoring. The course will prepare students for the CompTIA CySA+ certification exam. (F, Sp)

- Prerequisite Course: Minimum 2.0 in CITN 280
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITC 287 Cybersecurity Incident Respons

Credit Hours: 3 / Billing Hours: 3

The course addresses various underlying principles and techniques for detecting and responding to current and emerging computer security threats. Content will include how to handle various types of incidents, risk assessment methodologies, and various laws and policy related to incident handling. This will prepare students for ECIH Industry Certification. (F, Sp)

- Prerequisite Course: Minimum 2.0 in CITN 280
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITC 290 Cybersecurity Risk Management

Credit Hours: 4 / Billing Hours: 4

This course covers the technical knowledge and skills required to architect, engineer, integrate, and implement secure solutions across complex environments to support a resilient enterprise while considering the impact of governance, risk, and compliance requirements. The course will prepare students for the (ISC)² CISSP certification exam. (F, Sp)

- Prerequisite Course: Minimum 2.0 in CITN 280
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

1015

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITD 120 SQL Concepts

Credit Hours: 3 / Billing Hours: 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 ANSI standard SQL. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4
- Recommended: CITF 108 or CITP 110

CITD 227 Database Independent Study Credit Hours: .25 to 4 / Billing Hours: .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 Course: None. Department Approval is required.
- Placement Score: None

CITD 229 Special Topics in Database Credit Hours: .25 to 6 / Billing Hours: .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 Course: Determined by Section

CITD 250 Database Concepts

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in [CITF 110 and (CITP 110 or CITP 150)]
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

CITF 108 Microsoft Windows Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 3
- Corequisite Course:
- Recommended:
- Course Note:
 - 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.

CITF 110 Intro Computer Info Systems Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4
- Course Note: 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.

1017

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITF 120 Operating Systems Concepts Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5
- Recommended: CITF 110 and (CITP 110 or CITP 150)

CITF 140 Information Technology Ethics Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

CITF 227 Computer Foundations Ind Study Credit Hours: .25 to 4 / Billing Hours: .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 Course: None. Department Approval is required.
- Placement Score: None

CITF 229 Special Topics in Foundations Credit Hours: .25 to 6 / Billing Hours: .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 Course: Determined by Section

1018

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITF 240 IT Project Management

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CITF 110 or CITS 125)
- Placement Score: Reading Level 4 and Writing Level 4

CITF 260 Systems Analysis and Design

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in [CITF 110 and (CITP 110 or CITP 150)]
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITI 100 AI Foundations

Credit Hours: 3 / Billing Hours: 3

This course introduces the basic concepts and applications of artificial intelligence (AI). Students study the common domains of AI, tools and techniques leveraged to create learning models, project cycles, classifications of data, and the relevant ethical considerations. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

CITI 120 Datat Analysis with Python Credit Hours: 3 / Billing Hours: 3

This course introduces data analysis with Python. Students learn to use Python libraries, frameworks, and tools required for analysis. Students also explore how to mine, clean, and prepare data; create visualizations, reports, and dashboards; and handle large datasets efficiently while adhering to governing and ethical standards. This course aligns with the CompTIA Data+ certification. (Sp)

- Prerequisite Course: Minimum 2.0 in (CITP 110 and STAT 170 and CITD 120) or concurrently
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

CITI 140 Intro to Machine Learning Credit Hours: 3 / Billing Hours: 3

This course introduces the basic concepts and applications of machine learning (ML), an applied branch of artificial intelligence (AI). Students study the foundations of ML, tools and techniques leveraged to create learning models, project cycles, classifications of data, and relevant ethical considerations. (Sp)

- Prerequisite Course: Minimum 2.0 in CITI 120
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

CITI 210 Natural Language Processing Credit Hours: 3 / Billing Hours: 3

This course explores the applications of natural language processing (NLP), a branch of artificial intelligence (AI). Students study foundations of NLP, tools and techniques leveraged to create language models, data preparation, and the relevant ethical considerations throughout the design and creation of language recognition applications. (F)

- Prerequisite Course: Minimum 2.0 in CITI 140
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

CITI 220 Computer Vision

Credit Hours: 3 / Billing Hours: 3

This course explores the applications of computer vision (CV), a branch of artificial intelligence (AI). Students study the foundations of CV, tools and techniques leveraged to create vision models, data preparation, and the relevant ethical considerations throughout the design and creation of computer vision applications. (Sp)

- Prerequisite Course: Minimum 2.0 in CITI 140
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

CITN 115 IoT & Automation Fundamentals

Credit Hours: 5 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4

CITN 120 Networking Concepts

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4
- Recommended: CITF 110

1021

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITN 220 Introduction to Networks

Credit Hours: 3 / Billing Hours: 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 or concurrently
- Placement Score: 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.

CITN 222 Wireless Networking & Security

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

CITN 225 Switch Route Wireless Essentials Credit Hours: 3 / Billing Hours: 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 Score: 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.

CITN 227 Networking Independent Study Credit Hours: .25 to 4 / Billing Hours: .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 Course: None. Department Approval is required.
- Placement Score: None

CITN 229 Special Topics in Networking Credit Hours: .25 to 6 / Billing Hours: .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 Course: Determined by Section

2023-2024 Course Descriptions

CITN 230 Linux Operating System

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CITF 120 or CITS 125)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3

CITN 239 Special Topics/Networking P/Z Credit Hours: .25 to 6 / Billing Hours: .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 Course: Determined by Section

CITN 240 Ent Networking Sec Automation

Credit Hours: 3 / Billing Hours: 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 Score: 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.

2023-2024 Course Descriptions

CITN 244 Securing Networking Devices

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITN 245 Connecting Networks

Credit Hours: 3 / Billing Hours: 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 Score: 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.

CITN 250 Microsoft Network Server

Credit Hours: 3 / Billing Hours: 3

The student in this course learns installation, security, and best administration techniques for Microsoft Windows Servers. (F,Sp)

- Prerequisite Course: Minimum 2.0 in (CITF 120 or CITS 125)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3

1025

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITN 253 Networking with Windows Server Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 3

CITN 256 Identity with Windows Server Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 3

CITN 280 IT Security Foundations Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CITN 220 or CITS 225) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3
- Recommended: CITN 230 or CITN 250

2023-2024 Course Descriptions

CITO 100 Cloud Foundations with AWS

Credit Hours: 3 / Billing Hours: 3

This course introduces cloud computing on the Amazon Web Services (AWS) platform. Students study cloud computing principles, core services, cost models, security practices, migration options, and general management. This course aligns with the objectives for the AWS Certified Cloud Practitioner certification. (F, Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or (Minimum 2.0 in MATH 105 or MATH 106)]

CITO 120 Cloud Architecting with AWS

Credit Hours: 3 / Billing Hours: 3

This course introduces cloud architecting on the Amazon Web Services (AWS) platform. Students study and design architectures for workloads that must prioritize combinations of fault tolerance, availability, tiered applications, decoupling, elasticity, scalability, costs, and security. This course aligns with the objectives for the AWS Certified Solutions Architect Associate certification. (F, Sp)

- Prerequisite Course: Minimum 2.0 in (CITP 110 and CITS 125)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)

CITO 140 Cloud Development with AWS

Credit Hours: 3 / Billing Hours: 3

This course introduces cloud development operations on the Amazon Web Service (AWS) platform. Students develop Cloud applications for workloads that must prioritize combinations of fault tolerance, availability, tiered applications, decoupling, elasticity, scalability, costs, and security. This course aligns with the objectives for the AWS Certified Developer - Associate certification. (F)

- Prerequisite Course: Minimum 2.0 in (CITP 110 and CITS 125)
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH105 or MATH 106)]

2023-2024 Course Descriptions

CITO 240 Machine Learning with AWS

Credit Hours: 3 / Billing Hours: 3

This course introduces machine learning (ML), which is a branch of artificial intelligence (AI), on the Amazon Web Services (AWS) platform. Students study how to design, build, deploy, optimize, tune, train, and maintain ML solutions within cloud environments. This course aligns with the objectives for the AWS Certified Machine Learning - Specialty. (Sp)

- Prerequisite Course: Minimum 2.0 in (CITO 120 and CITO 140 and CITI 140)
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

CITP 110 Intro to Programming - Python

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: 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.

CITP 130 Intro to Mobile App Devel

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CITP 110 or CPSC 230) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

1028

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITP 140 Software Testing

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

CITP 150 Intro to VB.NET Programming

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (CITP 110 or CPSC 230)
- Placement Score: Reading Level 5 and Math Level 4

CITP 180 Intro to C#.NET Programming

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (CITP 110 or CPSC 230)
- Placement Score: Reading Level 5 and Math Level 4
- Course Note: This course is offered in a Hyflex format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for the final exam only. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

CITP 190 Intro to Programming in JAVA

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (CITP 110 or CPSC 230)
- Placement Score: Reading Level 5 and Math Level 4
- Course Note: This course is offered in a Hyflex format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for the final exam only. For more information, go to the [Online Course Testing webpage](#).

CITP 220 Game Design & Development

Credit Hours: 2 / Billing Hours: 4

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 Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Recommended: CITP 150

CITP 227 Programming Independent Study Credit Hours: .25 to 4 / Billing Hours: .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 Course: None. Department Approval is required.
- Placement Score: None

CITP 229 Special Topics in Programming Credit Hours: .25 to 6 / Billing Hours: .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)

1030

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

- Prerequisite Course: Determined by Section

CITP 230 Mobile App Devel for Android Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITP 235 Mobile App Devel for Apple Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITP 240 Advanced Software Testing Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Math Level 4

CITP 250 Advanced VB.NET Programming Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Math Level 4

1031

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITP 280 Advanced C#.NET Programming Credit Hours: 4 / Billing Hours: 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 within the last two years
- Placement Score: Reading Level 5 and Math Level 4
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for the final exam only. For more information, go to the [Online Course Testing webpage](#).

CITP 290 Adv JAVA Programming for Busn Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in [CITP 190 and (CITW 160 or concurrently)] within the last two years
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITP 295 Programming Internship Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

CITS 110 Helpdesk Support Specialist

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: 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 offered in a Hyflex format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for the final exam only. For more information, go to the [Online Course Testing webpage](#).

CITS 125 Computer Support: A+ Cert Prep

Credit Hours: 6 / Billing Hours: 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 Course: None
- Placement Score: 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.

CITS 170 Basic Electronic for PC Repair

Credit Hours: 6 / Billing Hours: 7

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 Course: None
- Placement Score: 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

1033

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITS 176 Computer Troubleshooting Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (CITS 125 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 2 and Math Level 4

CITS 225 Networking for PC Technicians Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in CITS 125
- Placement Score: 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.

CITS 227 Comp Support Indepen Study Credit Hours: .25 to 4 / Billing Hours: .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 Course: None. Department Approval is required.
- Placement Score: None

CITS 229 Special Topics/Support Credit Hours: .25 to 6 / Billing Hours: .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 Course: Determined by Section

1034

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITS 230 Computer Virtualization

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4 and Math Level 3
- Recommended: Minimum 2.0 in CITS 225 or CITN 230

CITS 285 IT Professional Internship

Credit Hours: 2 to 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

CITW 150 Internet Literacy

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: Familiarity with Windows

2023-2024 Course Descriptions

CITW 160 Web Development HTML & CSS Credit Hours: 3 / Billing Hours: 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. Students will demonstrate their understanding and application of the concepts introduced during the semester by creating an individual website project. (F, Sp, Su)

- Prerequisite Course: None
- Placement Score: 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).

CITW 165 Web Development JavaScript Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: Math Level 4

CITW 175 Web Site Management Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CITW 160 or ARTS 173) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: Math Level 4

1036

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CITW 180 Web Development ASP.NET Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in [CITW 160 and (CITP 150 or CITP 180)]
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CITW 185 Web Development PHP & MySQL Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (CITW 160 or ARTS 173) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: Math Level 4

CITW 227 Web Independent Study Credit Hours: .25 to 4 / Billing Hours: .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 Course: None. Department Approval is required.
- Placement Score: None

CITW 229 Special Topics/Web Credit Hours: .25 to 6 / Billing Hours: .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 Course: Determined by Section

1037

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CIVL 101 **Civil Drafting**

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: None

CIVL 110 **Density Certification**

Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: None

CIVL 120 **Surveying**

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Minimum 2.0 in MATH 114 or Math Level 5

CIVL 124 **Route Survey**

Credit Hours: 4 / Billing Hours: 6

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

2023-2024 Course Descriptions

CIVL 131 Traffic Technology

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: None

CIVL 135 Soils Technology

Credit Hours: 3 / Billing Hours: 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 Math Level noted below
- Placement Score: Math Level 5

CIVL 141 Site Inspection

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

CIVL 143 Site Dsgn & Layout/Civil Techn

Credit Hours: 3 / Billing Hours: 4

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 Score: None

1039

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CIVL 170 Special Topics/Civil Tech Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: None
- Placement Score: None

CIVL 171 Special Topics/Civil Tech P/Z Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

CIVL 225 Civil Tech Independent Study Credit Hours: 1 to 4 / Billing Hours: 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 Course: None
- Placement Score: None
- Restriction: Civil Technology Majors

CIVL 241 Statics/Strength of Materials Credit Hours: 4 / Billing Hours: 5

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. (F, Sp)

- Prerequisite Course: None
- Placement Score: Minimum 2.0 in MATH 114 or Math Level 5

1040

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CIVL 290 Civil Technology Internship Credit Hours: 2 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

CJUS 101 Intro to Criminal Justice Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 102 Crime Causes and Conditions Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 103 Criminal Law Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

1041

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CJUS 104 Theory of Patrol

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Recommended: CJUS 101

CJUS 106 Intro to Juvenile Justice

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 126 Juvenile Offenders/Families

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

CJUS 130 Local Detention

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

1042

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CJUS 131 Introduction to Corrections

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 133 Juvenile Residential Services

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

CJUS 134 Probation and Parole

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CJUS 101 or CJUS 131) or concurrently
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 135 Legal Issues in Corrections

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in (CJUS 130 or CJUS 131 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 4

1043

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

CJUS 201 Criminal Justice Org/Admin

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

CJUS 203 Criminal Procedure

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

CJUS 204 Criminal Investigation

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4
- Recommended: Minimum 2.0 in CJUS 103

CJUS 205 Policing into the 21st Century

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

CJUS 207 Digital Evidence/1st Responder Credit Hours: 3 / Billing Hours: 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. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Recommended: Minimum 2.0 in CJUS 101

CJUS 210 Intro to Forensic Science Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 242 Unarmed Defense Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: None
- Course Note: The \$39 Course Fee is non-refundable.

2023-2024 Course Descriptions

CJUS 245 Report Writing/Crim Justice Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in (CJUS 101 or CJUS 131)
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 247 Juvenile Justice: Special Pops Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CJUS 101 and CJUS 106)
- Placement Score: Reading Level 5 and Writing Level 4
- Recommended: Minimum 2.0 in (CJUS 126 and HUSE 110 and PSYC 200)

CJUS 250 Correctional Institutions Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in (CJUS 131 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 251 Correctional Clients Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in (CJUS 130 or CJUS 131 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

CJUS 255 Human Relations/Crim Justice Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in (CJUS 101 or CJUS 130 or CJUS 131) or concurrently
- Placement Score: Reading Level 5 and Writing Level 4

CJUS 270 Police Academy I Credit Hours: 11 / Billing Hours: 14

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 Course: Admission to the Police Academy
- Corequisite Course: CJUS 271 and PFFT 114 and PFHW 100
- Course Note: The \$400 of the Course Fee is non-refundable.

CJUS 271 Police Academy II Credit Hours: 14 / Billing Hours: 21

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 Course: Admission to the Police Academy
- Corequisite Course: CJUS 270 and PFFT 114 and PFHW 100

2023-2024 Course Descriptions

CJUS 272 Local Corrections Academy I

Credit Hours: 5 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None
- Corequisite Course: CJUS 273
- Course Note: The \$60 Course Fee is non-refundable.

CJUS 273 Local Corrections Academy II

Credit Hours: 3 / Billing Hours: 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 will include fire response, mental reactions, and prisoner resistance and restraint. This meets the Michigan Sheriff Coordinating and Training Council requirements.
(F, Sp)

- Prerequisite Course: None. Department Approval is required.
- Placement Score: None
- Corequisite Course: CJUS 272
- Course Note: The \$240 Course Fee is non-refundable.

CJUS 281 Directed Independent Study

Credit Hours: 1 to 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

CJUS 285 Law Enforcement Internship

Credit Hours: 2 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: 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.

CJUS 286 Juvenile Internship I

Credit Hours: 3 / Billing Hours: 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 Score: 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.

2023-2024 Course Descriptions

CJUS 287 Juvenile Internship II

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in CJUS 286 and (CJUS 133 or concurrently) and Department Approval
- Placement Score: 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.

CJUS 288 Corrections Internship

Credit Hours: 2 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: 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.

2023-2024 Course Descriptions

CJUS 295 Criminal Justice Special Topic Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

COMM 110 Communication in the Workplace Credit Hours: 3 / Billing Hours: 3

Introduction to oral communication skills in business and technology. Students will learn to interact effectively in diverse workplace situations. Students will learn how to interview for jobs, work effectively in a group, and enhance their use of technology in presentations. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

COMM 120 Dynamics of Communication Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

2023-2024 Course Descriptions

COMM 130 Fundamentals Public Speaking

Credit Hours: 3 / Billing Hours: 3

Through practical experience, students will develop essential skills to feel confident researching, organizing, drafting, and delivering oral presentations. Attention will be given to accurate outlining, source citation, and appropriate integration of presentational aids. Presentations will occur in informative, persuasive, ceremonial, and small group contexts. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

COMM 200 Small Group Communication

Credit Hours: 3 / Billing Hours: 3

Small group theory and process is examined from a communication perspective. Topics include, goal setting, stages of group development, group roles, leadership, decision making, listening, conflict resolution, problem solving, critical thinking and argumentation. (F)

- Prerequisite Course: Minimum 2.0 in (COMM 110 or COMM 120 or COMM 130 or ENGL 121)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

COMM 240 Interpersonal Communication

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in (COMM 110 or COMM 120 or COMM 130 or ENGL 121)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

COMM 260 Nonverbal Communication

Credit Hours: 3 / Billing Hours: 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 other cultures. (F)

- Prerequisite Course: Minimum 2.0 in (COMM 110 or COMM 120 or COMM 130 or ENGL 121)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

COMM 270 Mass Communication

Credit Hours: 3 / Billing Hours: 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, diversity, gender issues, violence, news, advertising, and the role of media in political campaigns. Assignments and observational projects are designed to help students become enlightened media consumers. (Sp)

- Prerequisite Course: Minimum 2.0 in (COMM 110 or COMM 120 or COMM 130 or ENGL 121)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

COMM 280 Intercultural Communication

Credit Hours: 3 / Billing Hours: 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: Minimum 2.0 in (COMM 110 or COMM 120 or COMM 130 or ENGL 121)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: Internet access may be needed for quizzes or other assessments in the course.

2023-2024 Course Descriptions

COMM 295 Independent Study in COMM Credit Hours: 1 to 4 / Billing Hours: 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 Course: Department Approval

CPAR 250 Community Paramedicine I Credit Hours: 3 / Billing Hours: 3

This course introduces students to the scope of practice and the role of the Community Integrated Paramedic within the healthcare system. Students will obtain an understanding of various systems of Community Paramedicine, the system they function within, and the patients they serve. A valid State of Michigan Paramedic License is required through the end of program. (F)

- Prerequisite Course: None. Program approval is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: CPAR 251 and CPAR 252

CPAR 251 Chronic Care in the Community Credit Hours: 5 / Billing Hours: 6

This course introduces students to the management of chronic disease states commonly encountered in the community setting. Students will obtain an understanding of treatment and assessment modalities which will enable them to provide safe and efficient patient care. A valid State of Michigan Paramedic license is required through the end of program. (F)

- Prerequisite Course: None. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level of 6 and Math Level 4
- Corequisite Course: CPAR 250 and CPAR 252

2023-2024 Course Descriptions

CPAR 252 Community Paramedicine II

Credit Hours: 3 / Billing Hours: 3

This course immerses students into the various roles of a Community Paramedic where they are able to evaluate, plan, and implement care strategies specific to their scope and role. Students will engage in case studies and scenarios, developing critical thinking skills required of a Community Paramedic. A valid State of Michigan Paramedic license is required through the end of program. (F)

- Prerequisite Course: None. Program approval is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: CPAR 250 and CPAR 251

CPAR 270 Community Paramedic Clinical

Credit Hours: 5 / Billing Hours: 6.5

This course immerses students into clinical rotations allowing them to experience various patient encounters. Under the supervision of a clinical preceptor and working within a healthcare team, students will perform interventions, assess and manage patients. A valid State of Michigan Paramedic license is required through the end of program. (Sp)

- Prerequisite Course: Minimum 3.0 in CPAR 250 and CPAR 251 and CPAR 252
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

CPSC 101 Intro to Computer Science

Credit Hours: 3 / Billing Hours: 3

Introduction to computer science and the programming profession. Topics include an overview of relational operators, logic, Boolean algebra, professionalism and ethics, machine coding, range and sorting algorithms, and foundations of computational problem solving. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in MATH 109 or (MATH 120 concurrently) or Math Placement Score indicated below
- Placement Score: [Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)] and Math Level 5

2023-2024 Course Descriptions

CPSC 131 Numerical Methods and MATLAB Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (MATH 151 or MATH 161) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6

CPSC 230 Algorithms and Computing w/C++ Credit Hours: 4 / Billing Hours: 4

This course develops students' skills with using 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, pointer variables, and algorithm analysis. Object orientation and data abstraction/information hiding is emphasized. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in CPSC 101 and Minimum 2.0 in (MATH 151 or MATH 161) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: A score of 3 or higher on the AP Computer Science exam can replace the CPSC 101 course prerequisite.

CPSC 231 Computing and Data Structures Credit Hours: 4 / Billing Hours: 4

Data abstraction and related theory for representation and access of information using C++. Algorithms and analyses of abstract data structures such as linked lists, stack, queue, and binary trees. Analyze properties of graphs, including connectivity, spanning trees, and traversal methods. (F,Sp)

- Prerequisite Course: Minimum 2.0 in CPSC 230
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

CPSC 260 Computer Science Structures

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in CPSC 230 and (MATH 151 or MATH 161) or concurrently
- Placement Score: Reading Level 5 and Writing Level 6

CTGT 210 CT Patient Care and Safety

Credit Hours: 1 / Billing Hours: 0

This course prepares the CT student to safely practice within the hospital or ambulatory care setting. Students will discuss the importance of patient assessment. Emphasis will be placed on radiation safety and contrast administration. Must be a Registered Radiologic Technologist. (Sp)

- Prerequisite Course: None. Admission to the Computed Tomography Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Corequisite Course: CTGT 215 and CTGT 230 and CTGT 240

CTGT 215 Principles of CT

Credit Hours: 1 / Billing Hours: 0

This course provides a historical overview of the CT profession. Students will explore the principles of digital imaging. Emphasis will be placed on the physical principles of computed tomography, data acquisition, and data processing. (Sp)

- Prerequisite Course: None. Admission to the Computed Tomography Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Corequisite Course: CTGT 210 and CTGT 230 and CTGT 240

2023-2024 Course Descriptions

CTGT 220 CT Instrumentation

Credit Hours: 2 / Billing Hours: 0

This course provides an introduction of the CT operating system. Students will review radiation physics and discuss factors affecting dose in CT. Emphasis will be placed on artifact recognition, artifact reduction, and image quality. (Su)

- Prerequisite Course: Minimum 2.5 in (CTGT 210 and CTGT 215 and CTGT 230 and CTGT 240)
- Placement Score: None
- Corequisite Course: CTGT 231 and CTGT 241

CTGT 230 CT Procedures & Pathophys I

Credit Hours: 3 / Billing Hours: 0

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 common pathologies found on CT images. Emphasis will be placed on contrast usage, imaging processes, and positioning considerations. (Sp)

- Prerequisite Course: None. Admission to the Computed Tomography Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Corequisite Course: CTGT 210 and CTGT 215 and CTGT 240

CTGT 231 CT Procedures & Pathophys II

Credit Hours: 3 / Billing Hours: 0

This is the final procedures and pathophysiology course in a series of two that will provide the student with considerations related to special imaging procedures. Students will explore common pathologies found on CT images. Emphasis will be placed on contrast usage, imaging processes, and positioning considerations. (Su)

- Prerequisite Course: Minimum 2.5 in (CTGT 210 and CTGT 215 and CTGT 230 and CTGT 240)
- Placement Score: None
- Corequisite Course: CTGT 220 and CTGT 241

2023-2024 Course Descriptions

CTGT 240 CT Clinical Practice I

Credit Hours: 3 / Billing Hours: 0

The first in a series of two clinical courses that provides the necessary supervised clinical education needed for the CT 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 employing professional values, attitudes, and behaviors. (Sp)

- Prerequisite Course: None. Admission to Computed Tomography Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Corequisite Course: CTGT 210 and CTGT 215 and CTGT 230

CTGT 241 CT Clinical Practice II

Credit Hours: 3 / Billing Hours: 0

The final clinical course in a series of two that provides the necessary supervised clinical education needed for the CT 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. (Su)

- Prerequisite Course: Minimum 2.5 in (CTGT 210 and CTGT 215 and CTGT 230 and CTGT 240)
- Placement Score: None
- Corequisite Course: CTGT 220 and CTGT 231

DANC 100 Intro to Dance Techniques

Credit Hours: 2 / Billing Hours: 3

This course is designed for students with little or no dance experience, with an overview of dance techniques, including, but not limited to, ballet, jazz, tap and modern genres. Basic dance vocabulary, steps, and combinations specific to each genre will be included. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None

2023-2024 Course Descriptions

DANC 101 Beginning Ballet

Credit Hours: 2 / Billing Hours: 3

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,Su)

- Prerequisite Course: None
- Placement Score: None

DANC 102 Beginning Modern

Credit Hours: 2 / Billing Hours: 3

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 Score: None

DANC 103 Beginning Jazz

Credit Hours: 2 / Billing Hours: 3

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 Score: None

DANC 104 Beginning Tap

Credit Hours: 2 / Billing Hours: 3

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 Score: None

2023-2024 Course Descriptions

DANC 161 Dance Repertory

Credit Hours: .25 to 1 / Billing Hours: .5 to 2

This course is designed for the student who has reached a level of dance technique that will adequately support their 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 Course: None
- Placement Score: None. Department Approval after successful audition.
- Corequisite Course: Approved students must be registered in one LCC Dance Technique class. Auditing only permitted for intermediate classes.

DANC 201 Intermediate Ballet

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 3.5 in DANC 101 or Dance Audition for Intermediate Ballet
- Placement Score: None

DANC 202 Intermediate Modern

Credit Hours: 3 / Billing Hours: 4

A continuation of beginning Modern. This course includes alignment 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 Course: Minimum 3.5 in DANC 102 or Dance Audition for Intermediate Modern

2023-2024 Course Descriptions

DANC 203 Intermediate Jazz

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 3.5 in DANC 103 or Dance Audition for Intermediate Jazz
- Placement Score: None

DANC 204 Intermediate Tap

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 3.5 in DANC 104 or Dance Audition for Intermediate Tap

DANC 261 Dance Repertory

Credit Hours: .25 to 1 / Billing Hours: .5 to 2

This course is designed for the student who has reached a level of dance technique that will adequately support their 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 Course: None
- Placement Score: None. Department Approval after successful audition.
- Corequisite Course: Approved students must be registered in one LCC Dance Technique class. Auditing only permitted for intermediate classes.

2023-2024 Course Descriptions

DANC 290 Dance Studio Internship

Credit Hours: 2 / Billing Hours: 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 Course: None. Department Approval Required
- Placement Score: None
- Course Note: For information, call the Business, Communication and the Arts Office at 517-483-1546.

DCTM 100 Intro to the Built Environment

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: 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.

DCTM 101 Drafting/Intro to CAD

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: 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.

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

DCTM 102 Industrial/Construction Safety

Credit Hours: 2 / Billing Hours: 3

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 Score: Reading Level 3 and Writing Level 2
- Course Note:
 - 1) This course requires students to be certified in CPR and First Aid as part of the course grade.
 - 2) 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.

DCTM 103 Codes and Specifications

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: 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 261, BLDT 277, BLDT 281 and CIVL 142.

DCTM 150 Civil Construction Materials

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: Minimum 2.0 in (MATH 114 or Math Level 5) and Reading Level 4

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

DCTM 200 Construction Management I

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 Recommended: Minimum 2.0 in (ACCG 101 and (ARCH 113 or ARCH 116) and ARCH 125

DCTM 201 Construction Management II

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [DCTM 200 and (MATH 115 or Math Level noted below)]
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 6
- Recommended: ARCH 125

DCTM 210 MEP Equipment for Buildings

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: 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

2023-2024 Course Descriptions

DCTM 220 BIM for Construction

Credit Hours: 4 / Billing Hours: 6

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. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]
- Recommended: DCTM 210

DENT 140 Oral Histology & Embryology

Credit Hours: 1.5 / Billing Hours: 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 is required.
- Placement Score: None
- Corequisite Course: DENT 142 and DENT 144 and DENT 146 and DENT 148

DENT 142 PreClinical Dental Hygiene

Credit Hours: 3 / Billing Hours: 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 is required.
- Placement Score: None
- Corequisite Course: DENT 140 and DENT 144 and DENT 146 and DENT 148

2023-2024 Course Descriptions

DENT 144 PreClinic Dental Hyg Practice

Credit Hours: 2 / Billing Hours: 8

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 is required.
- Placement Score: None
- Corequisite Course: DENT 140 and DENT 142 and DENT 146 and DENT 148
- Course Note: \$1,476 of the course fee is for a dental kit and is non-refundable.

DENT 146 Head, Neck & Oral Anatomy

Credit Hours: 3.5 / Billing Hours: 5.5

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 is required.
- Placement Score: None
- Corequisite Course: DENT 140 and DENT 142 and DENT 144 and DENT 148

DENT 148 Dental Radiography

Credit Hours: 3 / Billing Hours: 5

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 is required.
- Placement Score: None
- Corequisite Course: DENT 140 and DENT 142 and DENT 144 and DENT 146

2023-2024 Course Descriptions

DENT 152 Dental Hygiene I

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148)
- Placement Score: None
- Corequisite Course: DENT 154 and DENT 156 and DENT 158 and DENT 161

DENT 154 Clinical Dental Hygiene I

Credit Hours: 2 / Billing Hours: 8

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 Course: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148)
- Placement Score: None
- Corequisite Course: DENT 152 and DENT 156 and DENT 158 and DENT 161

DENT 156 Nutrition

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148)
- Placement Score: None
- Corequisite Course: DENT 152 and DENT 154 and DENT 158 and DENT 161

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

DENT 158 Dental Pharmacology

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148)
- Placement Score: None
- Corequisite Course: DENT 152 and DENT 154 and DENT 156 and DENT 161

DENT 161 Principles of Periodontics

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 140 and DENT 142 and DENT 144 and DENT 146 and DENT 148)
- Placement Score: None
- Corequisite Course: DENT 152 and DENT 154 and DENT 156 and DENT 158

DENT 174 Clinical Dental Hygiene II

Credit Hours: 1 / Billing Hours: 4

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 Course: Minimum 2.5 in (DENT 152 and DENT 154 and DENT 156 and DENT 158 and DENT 161)
- Placement Score: None
- Corequisite Course: DENT 176

2023-2024 Course Descriptions

DENT 176 Dental Materials & Methods

Credit Hours: 3 / Billing Hours: 5

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 Course: Minimum 2.5 in (DENT 152 and DENT 154 and DENT 156 and DENT 158 and DENT 161)
- Placement Score: None
- Corequisite Course: DENT 174

DENT 240 Anxiety & Pain Control Mgmt

Credit Hours: 2.5 / Billing Hours: 4

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 Course: Minimum 2.5 in (DENT 174 and DENT 176)
- Placement Score: None
- Corequisite Course: DENT 242 and DENT 244 and DENT 247 and DENT 248

DENT 242 Dental Hygiene III

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 174 and DENT 176)
- Placement Score: None
- Corequisite Course: DENT 240 and DENT 244 and DENT 247 and DENT 248

2023-2024 Course Descriptions

DENT 244 Clinical Dental Hygiene III

Credit Hours: 3 / Billing Hours: 12

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 Course: Minimum 2.5 in (DENT 174 and DENT 176)
- Placement Score: None
- Corequisite Course: DENT 240 and DENT 242 and DENT 247 and DENT 248
- Course Note: \$450 of the course fee is for a dental supply kit and is non-refundable.

DENT 247 Oral Pathology

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 174 and DENT 176)
- Placement Score: None
- Corequisite Course: DENT 240 and DENT 242 and DENT 244 and DENT 248

DENT 248 Dental Public Health & Educ

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 174 and DENT 176)
- Placement Score: None
- Corequisite Course: DENT 240 and DENT 242 and DENT 244 and DENT 247

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

DENT 252 Dental Hygiene IV

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 240 and DENT 242 and DENT 244 and DENT 247 and DENT 248)
- Placement Score: None
- Corequisite Course: DENT 254 and DENT 256

DENT 254 Clinical Dental Hygiene IV

Credit Hours: 3 / Billing Hours: 12

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 Course: Minimum 2.5 in (DENT 240 and DENT 242 and DENT 244 and DENT 247 and DENT 248)
- Placement Score: None
- Corequisite Course: DENT 252 and DENT 256

DENT 256 Community Oral Health

Credit Hours: 1.5 / Billing Hours: 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 Course: Minimum 2.5 in (DENT 240 and DENT 242 and DENT 244 and DENT 247 and DENT 248)
- Placement Score: None
- Corequisite Course: DENT 252 and DENT 254

2023-2024 Course Descriptions

DENT 270 Dental Hygiene Board Review Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

DENT 290 Directed Study Credit Hours: .25 to 3 / Billing Hours: .25 to 6

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

DMAC 120 Digital Audio Production I Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

DMAC 121 Digital Audio Production II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (DMAC 120 or MUSC 197)
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 122 Audio Recording I

Credit Hours: 4 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in DMAC 121
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 130 Digital Video Production

Credit Hours: 4 / Billing Hours: 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, and the distribution of digital media. Digital Video Production is the video foundation course required of all DMAC students. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 131 Digital Cinematography I

Credit Hours: 4 / Billing Hours: 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)

- Prerequisite Course: Minimum 3.0 in DMAC 130
- Placement Score: Reading Level 5 and Writing Level 6

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2023-2024 Course Descriptions

DMAC 132 Video Post-Production I

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (DMAC 120 and DMAC 130)
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 140 Pre-Production Design

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 141 Ethics and Impact of the Media

Credit Hours: 3 / Billing Hours: 3

This course explores the effects of 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 222 Audio Recording II

Credit Hours: 4 / Billing Hours: 4

An advanced recording course that provides in-depth instruction on signal acquisition, 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. (Sp)

- Prerequisite Course: Minimum 2.0 in DMAC 121 and DMAC 122
- Placement Score: Reading Level 5 and Writing Level 6

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2023-2024 Course Descriptions

DMAC 231 Digital Cinematography II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 3.0 in DMAC 131
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 232 Video Post-Production II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in DMAC 132
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 234 Studio Production Techniques

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (DMAC 120, DMAC 130 and DMAC 140)
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 240 Employment Issues in Media

Credit Hours: 2 / Billing Hours: 2

This 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. (Sp)

- Prerequisite Course: Minimum 2.0 in (DMAC 120, DMAC 130 and DMAC 140)
- Placement Score: Reading Level 5 and Writing Level 6

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2023-2024 Course Descriptions

DMAC 245 Workshop: Audio

Credit Hours: 2 / Billing Hours: 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 Course: None. Department Approval Required.
- Placement Score: None

DMAC 246 Workshop: Video

Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: None Department Approval required

DMAC 260 World Cinema

Credit Hours: 4 / Billing Hours: 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. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

DMAC 295 Media/Cinema Portfolio

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in DMAC 240 and 48 or more credits toward the DMAC degree and Department Approval Required
- Placement Score: Reading Level 5 and Writing Level 6

DMAC 296 Media/Cinema Internship

Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None
- Restriction: Digital Media and Cinema Majors Only

DTSC 200 Principles of Data Science

Credit Hours: 4 / Billing Hours: 4

This course develops fundamental skills to prepare students for further learning in advanced topics of Data Science, the study of extraction of knowledge from data. Students will learn the methodology involved and the fundamentals of the tools required to perform data analytics for the role of a data scientist. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (CPSC 101 and STAT 215)
- Placement Score: Reading Level 5 and Writing Level 6

DTSC 201 Data Science with Python

Credit Hours: 4 / Billing Hours: 4

This course develops fundamental and advanced skills to prepare students for a career in the field of data science. Students will continue to develop their skillset with the Python coding language and learn how to prepare and communicate data analysis results to stakeholders. (F,Sp)

- Prerequisite Course: Minimum 2.0 in DTSC 200
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

ECON 120 **Power, Authority and Exchange** **Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5

ECON 201 **Principles of Economics-Micro** **Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Math Level 4

ECON 202 **Principles of Economics-Macro** **Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Math Level 4

ECON 213 **U.S. Economic/Business History** **Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

2023-2024 Course Descriptions

ECON 260 Comparative Economic Systems Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

EDUC 204 Educational Psychology Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

EDUC 220 Introduction to Education Credit Hours: 3 / Billing Hours: 3

An overview of the foundations, philosophy, history, and organization of education as a human endeavor. Topics include legal concerns, issues and trends in American education, school governance, and school finance. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

EDUC 226 Reading in Elementary School Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: EDUC 220 and EDUC 204

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2023-2024 Course Descriptions

EDUC 228 Technology in Education

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: EDUC 220

EDUC 230 Intro to Special Education

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

EDUC 280 Teacher Education Practicum

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: 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.

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2023-2024 Course Descriptions

ELTA 105 Elect. Industry Orientation

Credit Hours: 0.5 / Billing Hours: 0.5

An overview of laws and standards that apply to the electrical construction industry in the State of Michigan. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 3

ELTA 106 Basic Electrical Calculations

Credit Hours: 2 / Billing Hours: 2

Reviews mathematical concepts required of the electrical technician in their 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 Course: None
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

ELTA 120 AC Fundamentals - Electrician

Credit Hours: 2 / Billing Hours: 3

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 Course: 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 Score: Reading Level 4 and Writing Level 2 and Math Level 5
- Course Note: \$8 of the Course Fee is non-refundable.

ELTA 155 Transformer Fundamentals

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in [ELTE 121 or (ELTA 120 or concurrently)]
- Placement Score: Reading Level 4 and Writing Level 2
- Course Note: \$8 of the Course Fee is non-refundable.

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2023-2024 Course Descriptions

ELTA 160 PLC Overview for Electricians

Credit Hours: 1 / Billing Hours: 2

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 Course: Minimum 2.0 in (ELTE 130 or ELTE 131)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note:
 - 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.

ELTA 180 Introduction to Fire Alarms

Credit Hours: 1 / Billing Hours: 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 Score: Reading Level 3 and Writing Level 2 and Math Level 3

ELTE 104 Employee Worksite Basics

Credit Hours: 1 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

ELTE 108 Practical Electricity I

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102) or concurrently
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]
- Course Note:
 - 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.

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2023-2024 Course Descriptions

ELTE 109 Practical Electricity II

Credit Hours: 2 / Billing Hours: 3

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 Course: 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 Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]
- Course Note:
 - 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.

ELTE 110 Practical Electricity

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (ELTA 101 or ELTE 100 or ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or TECH 102 or WELD 102 or concurrently)
- Placement Score: 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.

1085

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

ELTE 111 Intro to Industrial Automation

Credit Hours: 4 / Billing Hours: 6

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 Course: 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 Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]
- Course Note:
 - 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.

ELTE 112 Basic Wiring Installation

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in (ELTE 109 or ELTE 110 or HVAC 110)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note:
 - 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.

2023-2024 Course Descriptions

ELTE 121 Electrical Mathematics

Credit Hours: 5 / Billing Hours: 6

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 Course: 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)
- Placement Score: Reading Level 5

ELTE 122 Industrial Control Electronics

Credit Hours: 5 / Billing Hours: 7

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 Course: Minimum 2.0 in [(ELTE 108 or ELTE 110) and ELTE 111]
- Placement Score: 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.

ELTE 123 Motors and Transformers

Credit Hours: 5 / Billing Hours: 7

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 Score: Reading Level 5 and Writing Level 2 and Math Level 5
- Course Note: \$10 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

ELTE 129 Machine Controls I - A

Credit Hours: 2 / Billing Hours: 2.5

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)

- Prerequisite Course: Minimum 2.0 in (ELTE 108 or ELTE 110 or concurrently)
- Placement Score: 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.

ELTE 130 Machine Controls I - B

Credit Hours: 2 / Billing Hours: 2.5

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$8 of the Course Fee is non-refundable.

ELTE 131 Machine Controls I

Credit Hours: 4 / Billing Hours: 5

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 Course: Minimum 2.0 in (ELTE 108 or ELTE 110)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$10 of the Course Fee is non-refundable.

1088

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

ELTE 132 Control Panel Assembly

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in (ELTE 130 or ELTE 131) or concurrently
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3

ELTE 136 Digital Basics

Credit Hours: 2 / Billing Hours: 3

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 Score: Reading Level 5 and Writing Level 2 and Math Level 4

ELTE 141 National Electrical Code I

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (ELTE 109 or ELTE 110 or HVAC 110)
- Placement Score: 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.

2023-2024 Course Descriptions

ELTE 142 National Electrical Code II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in ELTE 141
- Placement Score: 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.

ELTE 145 Electrical Prints for Building

Credit Hours: 4 / Billing Hours: 5

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4
- Recommended: Minimum 2.0 in ELTE 121 or ELTA 120 or equivalent
- Course Note:
 - 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.

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2023-2024 Course Descriptions

ELTE 147 National Electric Code Update

Credit Hours: 1 / Billing Hours: 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 Course: None
- Recommended: Experience using the National Electrical Code

ELTE 150 Electric Motor Maintenance

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in (ELTE 109 or ELTE 110 or HVAC 110)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3

ELTE 154 Utility Prints and Diagrams

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (ELTA 120 or ELTE 121) or concurrently
- Placement Score: Reading Level 4 and Writing Level 4 and (Math Level 5 or Minimum 2.0 in ELTA 106)

2023-2024 Course Descriptions

ELTE 156 Lineworker/Utility Rigging

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (ELTE 102 or DCTM 102 or HVAC 102 or METS 102 or WELD 102 or concurrently)
- Placement Score: 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.

ELTE 170 Special Topics/Electrical Tech

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

ELTE 171 Special Topics/Electrical P/Z

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

2023-2024 Course Descriptions

ELTE 173 Energy Industry Fundamentals I Credit Hours: 2 / Billing Hours: 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 Score: 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

ELTE 174 Energy Industry Fundamental II Credit Hours: 2 / Billing Hours: 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 Score: 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.

ELTE 181 Pole Climbing I Credit Hours: 0.5 / Billing Hours: 1

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 Course: 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

2023-2024 Course Descriptions

ELTE 182 Pole Climbing II

Credit Hours: 0.5 / Billing Hours: 1

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 Score: None

ELTE 185 Pole Climbing Practice I

Credit Hours: 0.25 / Billing Hours: 0.5

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 Score: None

ELTE 186 Pole Climbing Practice II

Credit Hours: 0.25 / Billing Hours: 0.5

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 Course: Minimum 2.5 in ELTE 182 or passing grade in ELTE 185
- Placement Score: None

ELTE 187 Pole Climbing Practice III

Credit Hours: 0.25 / Billing Hours: 0.5

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 Course: Minimum 2.5 in ELTE 182 or passing grade in ELTE 185
- Placement Score: None

2023-2024 Course Descriptions

ELTE 188 Pole Climbing Practice IV Credit Hours: 0.25 / Billing Hours: 0.5

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 Course: Minimum 2.5 in ELTE 182 or passing grade in ELTE 185
- Placement Score: None

ELTE 232 Machine Controls II Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [ELTE 131 or (ELTE 129 and (ELTE 130 or concurrently)]
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4
- Course Note: \$10 of the Course Fee is non-refundable.

ELTE 251 Energy Generation & Control I Credit Hours: 4 / Billing Hours: 5

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 Course: Minimum 2.0 in (ELTE 121 and (ELTE 130 or ELTE 131) and (ELTE 123 or concurrently))
- Placement Score: 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 (egsa.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.

2023-2024 Course Descriptions

ELTE 252 Energy Generation & Control II Credit Hours: 4 / Billing Hours: 5

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 Course: Minimum 2.0 in (ELTE 123 and ELTE 251) and Reading Level 5 and Writing Level 4 and Math Level 5

ELTE 255 Power Instrumentation Credit Hours: 4 / Billing Hours: 5

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 Course: Minimum 2.0 in (ELTE 251 and ELTE 260) and Reading Level 5 and Writing Level 4 and Math Level 5

ELTE 260 Programmable Controllers I Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [ELTE 131 or (ELTE 129 and (ELTE 130 or concurrently)]
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4
- Course Note: \$5 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

ELTE 261 Programmable Controllers II

Credit Hours: 6 / Billing Hours: 8

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 Course: Minimum 2.0 in (ELTE 260 or ELTA 160)
- Placement Score: 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. \$5 of the Course Fee is non-refundable.

ELTE 262 Programmable Controllers III

Credit Hours: 5 / Billing Hours: 8

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 Course: Minimum 2.5 in ELTE 261
- Placement Score: 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.

ELTE 270 Lineworker Fundamentals

Credit Hours: 1 / Billing Hours: 1.5

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 Course: None. Program Approval for Acceptance into the Electrical Utility/Lineworker Curriculum is required.
- Placement Score: None

2023-2024 Course Descriptions

ELTE 272 Electric Basic Line Climbing Credit Hours: 4 / Billing Hours: 6

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 Course: None. Department Approval is required.
- Placement Score: None
- Course Note: \$60 of the Course Fee is non-refundable.

ELTE 274 Ground/Utility Worker Credit Hours: 6 / Billing Hours: 9

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 Score: None

ELTE 276 Energized Secondary Worker Credit Hours: 5 / Billing Hours: 8

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 Score: None

ELTE 290 Electrical Internship Credit Hours: 2 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

ELTE 291 Electrical Project Lab

Credit Hours: 1 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

EMTA 100 Emergency Medical Responder

Credit Hours: 4 / Billing Hours: 6

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 qualifies the student to take the National Registry of Emergency Medical Technicians (NREMT) certification exam, then apply for state licensure as a Medical First Responder (MFR) upon passing exam. (F,Sp)

- Prerequisite Course: None
- Placement Score: 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.
 - \$35 of the course fee is for medical supplies and is non-refundable.

2023-2024 Course Descriptions

EMTA 101 Basic EMT I

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Corequisite Course: EMTA 102
- Course Note:
 - 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 during the day to complete the Academy in one semester. 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.
 - 2) Students are required to pass an [ICHAT](#) Criminal Background investigation completed through the State of Michigan ICHAT webpage prior to starting the program. There is a fee for this service. Students must submit ICHAT documentation to the EMS Program office to receive Program Approval to enroll in the Academy. Documentation can be submitted electronically to LCC-HHS@star.lcc.edu
 - 3) ALL EMT ACADEMY STUDENTS must attend a mandatory orientation session held at the LCC main campus. Contact the EMS Program at 517-483-1410 for dates and times.
 - 4) There will be an additional cost to students for uniforms and textbooks. Medical supplies are included in the course fees. The medical supply fees are non-refundable.
 - 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/or in class.

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

EMTA 102 Basic EMT II

Credit Hours: 2 / Billing Hours: 4

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 Score: Reading Level 5 and Writing Level 6
- Corequisite Course: EMTA 101
- Course Note: \$35 of the course fee is for medical supplies and is non-refundable.

EMTA 103 Basic EMT III

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 3.0 in (EMTA 101 and EMTA 102)
- Placement Score: Reading Level 5 and Writing Level 6
- Corequisite Course: EMTA 104 and EMTA 112

EMTA 104 Basic EMT IV

Credit Hours: 2 / Billing Hours: 4

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 Course: Minimum 3.0 in (EMTA 101 and EMTA 102)
- Placement Score: Reading Level 5 and Writing Level 6
- Corequisite Course: EMTA 103 and EMTA 112

2023-2024 Course Descriptions

EMTA 112 Basic EMT Clinical

Credit Hours: 4 / Billing Hours: 4

The fifth course in a sequence of five to prepare the student as a basic EMT. Includes hospital and ambulance clinicals, and may include a community service component. Successful completion of all five basic EMT courses qualifies the student to take the National Registry of Emergency Medical Technicians (NREMT) certification exam and then apply for state licensure as an Emergency Medical Technician (EMT) upon passing exam. (F,Sp,Su)

- Prerequisite Course: Minimum 3.0 in (EMTA 101 and EMTA 102)
- Placement Score: Reading Level 5 and Writing Level 6
- Corequisite Course: EMTA 103 and EMTA 104

EMTA 222 EMS Instructor-Coordinator

Credit Hours: 9 / Billing Hours: 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. Must be able to provide proof of three (3) years of field experience with a responding Life Support agency within the State of Michigan to qualify for Instructor Coordinator licensure. (F)

- Prerequisite Course: None. Program Approval is required.
- Placement Score: 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 three (3) years of field experience with a responding Life Support agency within the State of Michigan. Please contact the EMS Program Director at 517-483-1530 to obtain approval to enroll in this course.

2023-2024 Course Descriptions

EMTA 224 EMS Instr-Coord Student Teach Credit Hours: 2 / Billing Hours: 2

The second of two courses for EMS personnel interested in becoming an EMS Instructor Coordinator (EMS IC), this course provides the opportunity to complete the required student teaching segment of the training in both didactic and laboratory settings. Successful completion of both courses qualifies the student to take the State of Michigan EMS IC licensure exam. (Sp)

- Prerequisite Course: Minimum 3.0 in EMTA 222. Department Approval is required.
- Placement Score: None
- Course Note: Please contact the EMS Program Director at 517-483-1530 to obtain approval to enroll in this course.

ENGL 098 Integrated Reading Writing I Credit Hours: 4 / Billing Hours: 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 SOCL120 or PSYC200 or BUSN118 and its corresponding lab is required. After registering for ENGL098, students must register for one of the following pairs of Academic Support labs and classes: NCAS 103/SOCL 120; NCAS 104/PSYC 200; or NCAS 105/BUSN 118. (Add the NCAS lab first to see information on the paired course.) Students are encouraged to meet with an Academic Advisor for further information. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 2 and Writing Level 2
- Recommended: Concurrent enrollment in ACAD 100

2023-2024 Course Descriptions

ENGL 099 Integrated Reading Writing II

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4
- Corequisite Course: ENGL 121 (ENGL 124 or ENGL 127 may be substituted with approval from the Integrated English Department)
- Course Note:
 - Students enrolled in ENGL 099 may take a second college-level course in addition to ENGL 121 or 124 or 127.
 - See an academic advisor for a complete list of college-level courses that allow concurrent enrollment with ENGL 099.

ENGL 118 Personal Writing

Credit Hours: 3 / Billing Hours: 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 Score: (Reading Level 5 and Writing Level 4) or ENGL 099 concurrently

ENGL 121 Composition I

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)

1104

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

ENGL 122 Composition II

Credit Hours: 4 / Billing Hours: 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. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (ENGL 121 or ENGL 131) or Placement Scores listed below
- Placement Score: Reading Level 5 and Writing Level 8

ENGL 124 Technical Writing

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)
- Recommended: Computer and/or keyboarding experience

ENGL 127 Business Writing

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)
- Recommended: Computer and/or keyboarding experience

2023-2024 Course Descriptions

ENGL 131 Honors Composition I

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 7

ENGL 132 Honors Composition II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 3.5 in (ENGL 121 or ENGL 131)
- Placement Score: Reading Level 5 and Writing Level 8

ENGL 200 Introduction to Literature

Credit Hours: 3 / Billing Hours: 3

Students will analyze and interpret poetry, drama, and narrative works from a globally and culturally diverse range of historical and literary periods. Close readings of both written texts and visual texts will be encouraged. Through written assignments and discussion, students will offer analytical, argumentative, or researched responses to the readings. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

2023-2024 Course Descriptions

ENGL 201 Introduction to Poetry

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 202 World Drama

Credit Hours: 4 / Billing Hours: 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 from Western and non-Western cultures. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 208 Children's Literature

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

2023-2024 Course Descriptions

ENGL 211 World Literature I

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 212 World Literature II

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 220 Science Fiction

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122

2023-2024 Course Descriptions

ENGL 240 The Film as Art

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 245 Popular Culture and Mass Media

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 255 American Lit to 1865

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 (formerly WRIT 121) or ENGL 131 (formerly WRIT 131) and ENGL 122

2023-2024 Course Descriptions

ENGL 256 American Lit 1865 to Present

Credit Hours: 4 / Billing Hours: 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 Course: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131 and ENGL 122

ENGL 260 African-American Literature

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 261 Creative Writing I

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (ENGL 121 or ENGL 131) or placement levels noted below
- Placement Score: Reading Level 5 and Writing Level 8

2023-2024 Course Descriptions

ENGL 266 **British Lit to 1800**

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 267 **British Lit 1800 to Present**

Credit Hours: 4 / Billing Hours: 4

British Literature II surveys the poetry, prose, and drama of the major British writers from the Romantics (19th Century) to the early 21st 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 270 **Gender and Literature**

Credit Hours: 4 / Billing Hours: 4

A study of selected works representing women and LGBTQ 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 LGBTQ communities. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: (ENGL 121 or ENGL 131) and ENGL 122

ENGL 271 **Creative Writing II**

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in ENGL 261
- Placement Score: Reading Level 5

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

ENGL 278 Writing the Novel

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in ENGL 261 or ENGL 264 or ENGL 260 or ENGL 264
- Placement Score: Reading Level 5

ENGL 279 Prose Style

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (ENGL 121 or ENGL 131)
- Placement Score: Reading Level 5 and Writing Level 8

ENGL 290 Shakespeare

Credit Hours: 4 / Billing Hours: 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 Course: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131 and ENGL 122

ENGL 295 Independent Study in English

Credit Hours: 1 to 4 / Billing Hours: 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 Course: Department Approval

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

ENVR 121 Environmental Rules and Regs

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

ENVR 122 Enviro Sampl & Instrumentation

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

ENVR 131 Industrial Process Safety

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

2023-2024 Course Descriptions

ESOL 098 ESL Combined Skills Level 4

Credit Hours: 6 / Billing Hours: 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 Course: Minimum 2.5 in (ESOL 090 and ESOL 095) or placement scores noted below
- Placement Score: ESOL 4 or (Reading Level 2 and Writing Level 2)
- Corequisite Course: MUSC 241 or PSYC 200 (excluding online and online hybrid sections) or THEA 110
- Course Note: An exit competency of 2.5 awards Reading Level 4 and Writing Level 4 and allows enrollment in ESOL 099, ESL Combined Skills Level 5, and the concurrent enrollment options associated with that course.

ESOL 099 ESL Combined Skills Level 5

Credit Hours: 4 / Billing Hours: 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: Minimum 2.5 in ESOL 098 or Placement Scores noted below
- Placement Score: (Reading Level 4 and Writing Level 4) or (ESOL Level 5)
- Corequisite Course:
- Course Note: ENGL 121 (ENGL 124 or ENGL 127 may be substituted with approval from the Integrated English Department)

2023-2024 Course Descriptions

FIRE 100 Principles Emergency Services

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

FIRE 101 MI F.F.T.C. Basic Fire Level I

Credit Hours: 10 / Billing Hours: 14

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 Course: None. Department Approval is required.
- Placement Score: None
- Corequisite Course: FIRE 102 and PFFT 119
- Course Note: \$800 of the Course Fee is non-refundable.

FIRE 102 MI F.F.T.C. Basic Fire Lev II

Credit Hours: 6 / Billing Hours: 8

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 Course: None. Department Approval is required.
- Placement Score: None
- Corequisite Course: FIRE 101 and PFFT 119

FIRE 104 Fire Behavior & Combustion

Credit Hours: 3 / Billing Hours: 3

This course explores the theories and fundamentals of how and why fires start and spread. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

FIRE 105 **Fire/Hydraulics/Water Supply** **Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

FIRE 110 **Fire Prevention** **Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (FIRE 100 or concurrently) or (FIRE 101 and FIRE 102)
- Placement Score: Reading Level 5 and Writing Level 4

FIRE 112 **Occup Health & Safety/Fire Svc** **Credit Hours: 4 / Billing Hours: 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: None
- Placement Score: Reading Level 5 and Writing Level 4

FIRE 115 **Bldg Construction/Fire Protect** **Credit Hours: 4 / Billing Hours: 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, pre-planning fire operations, and operating at emergencies. (F)

- Prerequisite Course: Minimum 2.0 in [(FIRE 100 or concurrently) or (FIRE 101 and FIRE 102)]
- Placement Score: Reading Level 5 and Writing Level 4

1116

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

FIRE 122 Hazardous Materials Chemistry Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in ((FIRE 104 or concurrently) or (FIRE 101 and FIRE 102))
- Placement Score: Reading Level 5 and Writing Level 4

FIRE 125 Fire Protection Systems Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (FIRE 105 or FIRE 110)
- Placement Score: Reading Level 5 and Writing Level 4

FIRE 150 Strategy and Tactics Credit Hours: 4 / Billing Hours: 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 Course: (Minimum 2.0 in FIRE 101 or FIRE 102) or (MI F.F.T.C. Fire Fighter I & II Certification) and Department Approval
- Placement Score: None
- Course Note: Department Approval required. Contact the Fire Technology Program at (517) 483-1394.

1117

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

FIRE 210 **Fire Investigation I**

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (FIRE 104 or concurrently) or (FIRE 101 and FIRE 102) and Department Approval
- Placement Score: None
- Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.

FIRE 215 **Fire Investigation II**

Credit Hours: 3 / Billing Hours: 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 Score: None
- Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.

FIRE 220 **Hazardous Materials/Fire Svc**

Credit Hours: 4 / Billing Hours: 5

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 Course: Minimum 2.0 in FIRE 104 or (FIRE 101 and FIRE 102) and Haz-Mat Operational Level Training and Department Approval
- Placement Score: None
- Course Note: Contact the Fire Technology Program at (517) 483-9608 for department approval.

2023-2024 Course Descriptions

FIRE 245 Fire Officer I & II

Credit Hours: 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None
- Course Note: Department approval required. Contact the Fire Technology Program at 517-483-1394.

FIRE 250 Fire Administration I

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (FIRE 150 or Michigan Office of Firefighter Training Fire Officer III)
- Placement Score: Reading Level 5 and Writing Level 4
- Course Note: Students with Michigan Office of Firefighter Training Fire Officer III certification should contact the FIRE program office at 517-483-1394 for enrollment approval.

FIRE 255 Fire Officer III & IV

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (FIRE 245 and FIRE 250) or concurrently and Department Approval
- Placement Score: None
- Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.

2023-2024 Course Descriptions

FIRE 260 Legal Aspects/Fire Service

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in FIRE 104 or (FIRE 101 and FIRE 102) and Department Approval
- Placement Score: None
- Course Note: Contact the Fire Technology Program advisor at (517) 483-1394 for department approval.

FIRE 265 Fire Service Blue Card

Credit Hours: 4 / Billing Hours: 4.5

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 Course: None. Department Approval is required.
- Placement Score: 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.

FIRE 270 Fire Service Career Developmnt

Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: 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.

2023-2024 Course Descriptions

FIRE 280 Fire Directed Indep Study Credit Hours: .5 to 3 / Billing Hours: .5 to 6

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 Course: None. Department Approval is required.
- Placement Score: None
- Course Note: Department approval required. Contact the Fire Technology Program advisor at (517) 483-1394.

FIRE 285 Fire Science Special Topics Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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)

- Prerequisite Course: Determined by Section
- Course Note: Department approval required. Contact the Fire Technology Program advisor at (517) 483-1394.

FIRE2 95 Fire Science Special Topics Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

FREN 121 Elementary French I Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

1121

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

FREN 122 Elementary French II

Credit Hours: 4 / Billing Hours: 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. (Sp,Su)

- Prerequisite Course: Minimum 2.0 in FREN 121 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

FREN 201 Intermediate French I

Credit Hours: 4 / Billing Hours: 4

First course of a two-semester sequence in intermediate French. 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 Course: Minimum 2.0 in FREN 122 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

FREN 202 Intermediate French II

Credit Hours: 4 / Billing Hours: 4

Second course of a two-semester sequence in intermediate French. 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 Course: Minimum 2.0 in FREN 201 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

2023-2024 Course Descriptions

GEOG 120 Introduction to Geography

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently) and [Math Level 4 or Minimum 2.0 in (Math 105 or Math 106)]
- Recommended: ENGL 121

GEOG 200 World Regional Geography

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

GEOG 202 Geography of North America

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

GEOG 220 Weather, Forecasting & Climate Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and (Math Level 4 or minimum 2.0 in MATH 105 or MATH 106).

GEOG 221 Physical Geography Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

GEOG 221 Physical Geology Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or (MATH 105 concurrently or MATH 106 concurrently)]

2023-2024 Course Descriptions

GEOL 222 Historical Geology

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in [GEOL 221 or GEOL 230 or (ISCI 121 and ISCI 122)]
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

GEOL 230 Environmental Geology

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or (MATH 105 concurrently or MATH 106 concurrently)]

GERO 100 Introduction to Human Aging

Credit Hours: 4 / Billing Hours: 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, their families, community, and society. Students will learn to identify and utilize resources across the human services network. This course complies with the Gerontology Competencies, Academy for Gerontology in Higher Education (AGHE). (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

GERO 164 Med & Alcohol Use/Older Adults Credit Hours: 0.5 / Billing Hours: 0

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

GERO 169 Legal Rights of Older Adults Credit Hours: 0.5 / Billing Hours: 0

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

GERO 191 Special Topics in Gerontology Credit Hours: .25 to 4 / Billing Hours: 0

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

GRMN 121 Elementary German I Credit Hours: 4 / Billing Hours: 4

This is the first course of a two-semester sequence in elementary German for students who have no or little knowledge of 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. This course helps beginner German students develop effective language learning strategies. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

1126

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

GRMN 122 Elementary German II

Credit Hours: 4 / Billing Hours: 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. This course helps novice German students develop effective language learning strategies. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in GRMN 121 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

GRMN 201 Intermediate German I

Credit Hours: 4 / Billing Hours: 4

This is the first course of a two-semester sequence in intermediate German. This course reviews and introduces more advanced grammar structures, composition, vocabulary building, group discussions, and more information on German culture and everyday life. Class is taught mainly in German. This course helps intermediate German students develop effective language learning strategies. (F)

- Prerequisite Course: Minimum 2.0 in GRMN 122 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

GRMN 202 Intermediate German II

Credit Hours: 4 / Billing Hours: 4

This is the second course of a two-semester sequence in intermediate German. This course reviews and introduces more advanced grammar structures, composition, vocabulary building, group discussions, and more information on German culture and everyday life. Class is taught mainly in German. This course helps intermediate German students to continue to develop effective language learning strategies. (Sp)

- Prerequisite Course: Minimum 2.0 in GRMN 201 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

2023-2024 Course Descriptions

GSCI 100 Intro to Geospatial Tech

Credit Hours: 3 / Billing Hours: 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,Sp,Su)

- Prerequisite Course: None
- Placement Score: None

GSCI 110 Beginning ArcGIS

Credit Hours: 3 / Billing Hours: 5

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-world scenarios. GIS principles will also be covered. Students will conceptualize, design and present a final project. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 3 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

GSCI 120 Advanced ArcGIS

Credit Hours: 3 / Billing Hours: 5

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 Score: Reading Level 3 and Math Level 4

2023-2024 Course Descriptions

GSCI 150 UAS Flight for Industry Credit Hours: 3 / Billing Hours: 4

This course covers the foundations of unmanned aircraft systems, including history, UAS systems, payloads, classes of UAS systems, applications, mission planning and control and recovery systems. A wide variety of industry-specific uses will be presented. Students will demonstrate knowledge through hands-on drone use. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 4
- Corequisite Course: AVAU 100

GSCI 175 Special Topics/GIS Technology Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

GSCI 210 Global Positioning Systems Credit Hours: 3 / Billing Hours: 4

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 Score: None

GSCI 240 Cartography in GIS Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

GSCI 241 Remote Sens/AirPhoto Interpret Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

GSCI 250 UAS Map Analysis Credit Hours: 3 / Billing Hours: 4

This class introduces the fundamentals of map data collection with UAS (drones), including concepts, real-world examples, navigation, best practices, data acquisition, mission assessment, data processing, event coverage, and map delivery. Students will demonstrate knowledge through hands-on drone use. (F)

- Prerequisite Course: Minimum 2.0 in GSCI 150
- Placement Score: Reading Level 5 and Math Level 4

GSCI 260 Automating Workflows in GIS Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

GSCI 264 Web GIS Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

1130

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

GSCI 271 Parcel Mapping

Credit Hours: 3 / Billing Hours: 5

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 Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

GSCI 275 GIS Proj Mgmt & Implementation

Credit Hours: 3 / Billing Hours: 4

This is a capstone course designed for students to develop the skills necessary for the design and implementation of GIS. The student will present their 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 Course: None. Department Approval is required.
- Placement Score: None

GSCI 290 GIS Internship

Credit Hours: 2 to 4 / Billing Hours: 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 Course: Department Approval

HERT 110 Equipment Introduction

Credit Hours: 5 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: None

1131

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

HERT 120 Heavy Engine Rebuild

Credit Hours: 6 / Billing Hours: 6

Upon completion of this course, the successful student will be able to disassemble, inspect, and reassemble a heavy-duty diesel engine. (F)

- Prerequisite Course: None
- Placement Score: None

HERT 125 Heavy Equipment Electronics

Credit Hours: 5 / Billing Hours: 5

Upon completion of this course the successful student will be able to diagnose and repair electrical problems on heavy duty equipment. (Sp)

- Prerequisite Course: None
- Placement Score: None

HERT 130 Equipment Hydraulics

Credit Hours: 6 / Billing Hours: 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 Course: None
- Placement Score: None

HERT 135 Diesel Fuel Systems

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: None

HERT 140 Equipment Powertrain

Credit Hours: 5 / Billing Hours: 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 Course: None
- Placement Score: None

1132

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

HERT 145 Equipment Service Writing Credit Hours: 4 / Billing Hours: 4

Upon completion the student will be able to make repair estimates on a disabled piece of construction equipment. (Su)

- Prerequisite Course: None
- Placement Score: None

HERT 160 Equipment HVAC/Cab Controls Credit Hours: 4 / Billing Hours: 6

This course prepares students for ASE, State of Michigan, and EPA Section 609 certification testing. Topics include theory and operation, maintenance, diagnosis, inspection, and repair of automobile and heavy equipment heating, ventilation, and air conditioning systems. Students will practice the use of special tools and procedures related to refrigerant handling, recovery, recycling, and diagnosis. (F)

- Prerequisite Course: Minimum 2.0 in [HERT 110, HERT 120, and HERT 125]
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3.

HERT 210 Heavy Equipment Internship Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

HIST 150 African-American History Credit Hours: 4 / Billing Hours: 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

2023-2024 Course Descriptions

HIST 210 **Historical Methods and Skills** **Credit Hours: 4 / Billing Hours: 4**

Covers problems of research, writing, philosophy, and interpretation of history, involving a detailed examination of a particular area of American history. (Sp)

- Prerequisite Course: Minimum 2.0 in (HIST 211 or HIST 212)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: This course is intended to be the capstone course for History majors.

HIST 211 **U.S. History to 1877** **Credit Hours: 4 / Billing Hours: 4**

A political, economic, social and cultural history of the United States from colonial beginnings to 1877. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HIST 212 **U.S. History: 1877 to Present** **Credit Hours: 4 / Billing Hours: 4**

A political, economic, social, and cultural history of the United States from the end of reconstruction to the present. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HIST 214 **African History** **Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131

HIST 215 **World History to 1500** **Credit Hours: 4 / Billing Hours: 4**

This course will trace human civilizations from their origins to 1500 by exploring their cultural, social, religious, economic, and political developments and interactions. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

1134

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

HIST 216 World History since 1500

Credit Hours: 4 / Billing Hours: 4

This course will trace the development of the modern world from 1500 by exploring cultural, social, religious, economic, and political developments and interactions that shape modern societies. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HIST 220 Michigan History

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131

HIST 235 Modern European History

Credit Hours: 4 / Billing Hours: 4

This course will survey political, social, economic, and cultural developments in Europe from approximately the 17th Century to the present. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HIST 240 Latin American History

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

HIST 250 History of Modern Asia

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HIST 295 Independent Study in History

Credit Hours: 1 to 4 / Billing Hours: 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 Course: None
- Placement Score: None; Department approval required

HONR 151 Honors Colloquy I

Credit Hours: 1 / Billing Hours: 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 Course: None; Honors Program approval required.
- Placement Score: None

HONR 152 Honors Colloquy II

Credit Hours: 1 / Billing Hours: 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 Course: None; Honors Program approval required.
- Placement Score: None

1136

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

HONR 155 Community Service Practicum I Credit Hours: 1 / Billing Hours: 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 Course: None; Honors Program approval required.
- Placement Score: None

HONR 156 Community Service Practicum II Credit Hours: 1 / Billing Hours: 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 Course: None; Honors Program approval required.
- Placement Score: None

HONR 295 Honors Independent Study Credit Hours: 1 to 4 / Billing Hours: 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 Course: None; Honors Program approval required.
- Placement Score: None

HSAC 090 ERESA Heating & Air Cond Credit Hours: 8 / Billing Hours: 0

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

2023-2024 Course Descriptions

HSAH 080 CCRESA PreAllied Hlth Car Prep Credit Hours: 8 / Billing Hours: 0

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: CCRESA Student

HSAH 090 ERESA Health Occupations I Credit Hours: 8 / Billing Hours: 0

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)

- Prerequisite: ERESA Student

HSAH 092 ERESA Health Occupations II Credit Hours: 8 / Billing Hours: 0

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-care-related job responsibilities. Hands-on EHR experience is included. (F,Sp)

- Prerequisite: ERESA Student

HSAM 080 CCRESA Auto Service Credit Hours: 8 / Billing Hours: 0

This course for CCRESA 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 AUTO 100 and basic training in engine overhaul. Students are enrolled both fall and spring semesters. (F,Sp)

- Prerequisite: CCRESA Student

2023-2024 Course Descriptions

HSAM 090 ERESA Auto Mechanics

Credit Hours: 8 / Billing Hours: 0

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

HSAM 091 ERESA Automotive Technology II

Credit Hours: 8 / Billing Hours: 0

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

HSAT 090 ERESA Architectural Drafting

Credit Hours: 8 / Billing Hours: 0

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

HSBT 090 ERESA Building Trades

Credit Hours: 6 / Billing Hours: 0

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

2023-2024 Course Descriptions

HSCJ 070 **Alma HS Crim Justice/Pub Svc** **Credit Hours: 8 / Billing Hours: 0**

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

HSCJ 080 **CCRESA Crim Justice/Pub Svc** **Credit Hours: 8 / Billing Hours: 0**

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

HSCJ 082 **CCRESA Crim Justice/Pub Svc II** **Credit Hours: 8 / Billing Hours: 0**

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

HSCJ 090 **ERESA Crim Justc/Public Svc I** **Credit Hours: 8 / Billing Hours: 0**

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 area of law enforcement, the courts, and corrections. Students are enrolled both fall and spring semesters to meet all course objectives. (F,Sp)

- Prerequisite: ERESA Student

2023-2024 Course Descriptions

HSCJ 091 ERESA Intro Criminal Justice Credit Hours: 3 / Billing Hours: 0

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

HSCJ 092 ERESA Crim Just/Law Enforce II Credit Hours: 8 / Billing Hours: 0

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

HSCJ 093 ERESA Human Relations/Crim Jus Credit Hours: 3 / Billing Hours: 0

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)

- Prerequisite: ERESA Student

HSCS 080 CCRESA Computer Support I Credit Hours: 8 / Billing Hours: 0

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 Technology in Business Degree . (F,Sp)

- Prerequisite: CCRESA Student

H SCT 090 ERESA Construction Technology Credit Hours: 8 / Billing Hours: 0

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

2023-2024 Course Descriptions

HSDC 071 HSDC Team Time

Credit Hours: 0.25 / Billing Hours: 0

Students will receive high school credit for developing skills in goal setting, decision making, career development and information technology. (Fa,Sp,Su)

- Prerequisite: H.S.D.C. Student

HSDM 090 ERESA Design and Machining

Credit Hours: 8 / Billing Hours: 0

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)

- Prerequisite: ERESA Student

HSDM 091 ERESA Drafting/Design

Credit Hours: 6 / Billing Hours: 0

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

HSDM 092 ERESA Machine Tool Operations

Credit Hours: 2 / Billing Hours: 0

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

2023-2024 Course Descriptions

HSDT 090 ERESA Industrial Drafting Credit Hours: 8 / Billing Hours: 0

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

HSFS 080 CCRESA Intro to Fire Science Credit Hours: 8 / Billing Hours: 0

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

HSFS 090 ERESA Intro to Fire Science Credit Hours: 8 / Billing Hours: 0

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

HSKN 090 ERESA Sports Med Foundations Credit Hours: 8 / Billing Hours: 0

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: ERESA Student

2023-2024 Course Descriptions

HSLE 090 ERESA Law Enforcement

Credit Hours: 8 / Billing Hours: 0

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

HSMA 090 ERESA Mechatronics/Automation

Credit Hours: 8 / Billing Hours: 0

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

HSMT 090 ERESA Manufacturing Tech

Credit Hours: 1.5 / Billing Hours: 0

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

HSWD 090 ERESA Comp Graphic/Web Dsgn

Credit Hours: 8 / Billing Hours: 0

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

2023-2024 Course Descriptions

HSWT 090 ERESA Welding/Cutting

Credit Hours: 8 / Billing Hours: 0

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

HSWT 092 ERESA Welding/Cutting II

Credit Hours: 8 / Billing Hours: 0

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

HTEC 051 TEC Seminar

Credit Hours: .5 to 1 / Billing Hours: 0

The seminar sessions will focus on mentoring, advising, academic support and intervention for each student.

HTEC 053 TEC College Prep Math A

Credit Hours: 1 / Billing Hours: 0

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

2023-2024 Course Descriptions

HTEC 061 TEC College Prep English A

Credit Hours: 1 / Billing Hours: 0

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.

HTEC 062 TEC Civics

Credit Hours: 1 / Billing Hours: 0

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.

HTEC 063 TEC - Integrated Science A

Credit Hours: 1 / Billing Hours: 0

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.

2023-2024 Course Descriptions

HTEC 068 TEC Economics

Credit Hours: 1 / Billing Hours: 0

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.

HTEC 078 TEC - Physics A

Credit Hours: 1 / Billing Hours: 0

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.

HUMS 140 Art of Being Human

Credit Hours: 4 / Billing Hours: 4

This course analyzes the human experience through the stages of life within historical and global frameworks. With consideration given to creative traditions, topics are chosen to encourage a student's appreciation of common human themes and values across diverse cultures in order to understand what it means to be human, as well as promote self-discovery and personal creativity. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

HUMS 160 Mythology

Credit Hours: 4 / Billing Hours: 4

Students will analyze a variety of mythological works, in text and other forms, from multiple regions of the world such as Africa, the Americas, Asia, and Europe. The student will apply knowledge of The Hero's Journey and the basic functions of myth to enhance their appreciation of primary sources, individually and culturally. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131

HUMS 215 American Cultural Experience

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HUMS 223 The Western World to 1500

Credit Hours: 4 / Billing Hours: 4

The course introduces students to the artistic, intellectual, and technological developments that shaped the western worldview to 1500. The creativity, richness, and diversity of western culture and connections between people and places will be emphasized. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

HUMS 224 The Western World since 1500

Credit Hours: 4 / Billing Hours: 4

The course introduces students to the artistic, intellectual, and technological developments that shaped the western worldview from 1500 to present. The creativity, richness, and diversity of western culture and connections between people and places will be emphasized. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

HUMS 260 Ancient Egypt

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131

HUMS 295 Ind Study in Humanities

Credit Hours: 1 to 4 / Billing Hours: 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 Course: None
- Placement Score: None; Department approval required

HUSE 100 Introduction to Human Services

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4

HUSE 105 Personal Dynamics/Interviewing

Credit Hours: 4 / Billing Hours: 4

The nature of personal development, knowledge and values are taught. 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 Score: Reading Level 4 and Writing Level 4
- Recommended: Minimum 2.5 in (HUSE 100 or SOWK 101)

2023-2024 Course Descriptions

HUSE 110 Child Abuse and Neglect

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4
- Recommended: Minimum 2.5 in HUSE 105

HUSE 242 The Family: Addiction/Violence

Credit Hours: 3 / Billing Hours: 3

This course provides a holistic conceptual framework to understanding the interplay of substance misuse with violence across the family life cycle. Attention is brought to the many factors of substance misuse and violence. Assessment, intervention, the role of treatment, and broad-spectrum human services are discussed. This course complies with the Ethical Standards, National Organization of Human Services. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4
- Recommended: Minimum 2.5 in [(HUSE 100 or SOWK 101) and HUSE 112]

HUSE 282 Human Services Practicum I

Credit Hours: 4 / Billing Hours: 4

This course combines classroom training with beginning field experience in a community agency, with exposure to community structure and the internal working of human services organizations. Emphasis is on the development of professional skills while adhering to professional ethics and standards. This course complies with the Ethical Standards, National Organization of Human Services. (F)

- Prerequisite Course: 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 Score: Reading Level 5 and Writing Level 6

1150

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

HUSE 284 Human Services Practicum II

Credit Hours: 4 / Billing Hours: 4

This course combines classroom training with advanced field experience in a community agency, emphasizing communications in diverse settings with diverse populations. Analysis of services identifies systems, people, and resources to provide quality services. Potential careers are discussed. This course complies with the Ethical Standards, National Organization of Human Services. (Sp)

- Prerequisite Course: Minimum 2.5 in HUSE 282. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

HVAC 100 Fundamentals of HVAC

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 3 and Writing Level 2
- Course Note: \$4 of the Course Fee is non-refundable.

HVAC 113 HVAC/R Piping

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (HVAC 102 or DCTM 102 or ELTE 102 or METS 102 or WELD 102 or concurrently)
- Placement Score: Reading Level 3 and Writing Level 2
- Course Note: \$5 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

HVAC 115 Sheet Metal Fab & Installation

Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in (HVAC 102 or DCTM 102 or ELTE 102 or METS 102 or WELD 102) or concurrently
- Placement Score: 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.

HVAC 120 Heating I

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (HVAC 100 and HVAC 110)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

HVAC 130 Air Conditioning I

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (HVAC 100 and HVAC 110)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$34 of the Course Fee is non-refundable.

1152

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

HVAC 140 Residential Energy

Credit Hours: 3 / Billing Hours: 4

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. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 3 and Writing Level 4 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

HVAC 170 Special Topics in HVAC/R Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

HVAC 201 Mechanical Code

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (HVAC 120 and HVAC 130)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$6 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

HVAC 210 Solar Energy Technologies

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: Reading Level 3 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

HVAC 220 Heating II

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (HVAC 111 and HVAC 120)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

HVAC 221 Introduction to Hydronics

Credit Hours: 3 / Billing Hours: 4

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)

- Prerequisite Course: Minimum 2.0 in HVAC 120
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

HVAC 230 Air Conditioning II

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (HVAC 111 and HVAC 130)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

HVAC 231 Heat Pump

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

HVAC 240 Refrigeration I

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

HVAC 241 Refrigeration II

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

2023-2024 Course Descriptions

HVAC 251 Fund of Direct Digital Control Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$5 of the Course Fee is non-refundable.

HVAC 260 Building Commissioning Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (DCTM 103 or AEET 251) and Reading Level 5 and Writing Level 6 and Math Level 5

HVAC 280 EPA 608 Certification Review Credit Hours: 1 / Billing Hours: 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 Course: None
- Placement Score: None
- Recommended: HVAC 130 or HVAC field experience
- Course Note: \$30 of the Course Fee is non-refundable.

HVAC 290 HVAC Internship Credit Hours: 2 to 4 / Billing Hours: 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)

1156

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

- Prerequisite Course: None. Department Approval is required.
- Placement Score: None

HVAC 110 Applied Electricity I

Credit Hours: 3 / Billing Hours: 4

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)

- Prerequisite Course: Minimum 2.0 in (HVAC 102 or DCTM 102 or ELTE 102 or METS 102 or WELD 102) or concurrently
- Placement Score: 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.

HVAC 111 Applied Electricity II

Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in (HVAC 100 and HVAC 110)
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note: \$4 of the Course Fee is non-refundable.

IDMS 150 Sonographic Directed Study

Credit Hours: 1 to 5 / Billing Hours: 1 to 8

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

1157

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

IDMS 170 Intro to Ultrasound Knobology

Credit Hours: 2 / Billing Hours: 3

In this course students will learn how to safely operate ultrasound equipment, perform routine machine maintenance, and operate equipment knobology as it relates to image optimization. Scanning, and sonographic positioning and technique, will be explored. Students will learn to use appropriate ergonomics while performing an exam in order to minimize and/or prevent work-related musculoskeletal disorders. (Su)

- Prerequisite Course: None. Admission to Diagnostic Medical Sonography Program is required.
- Placement Score: Reading Level 5 and Writing Level 6
- Corequisite Course: IDMS 200 and IDMS 270
- Course Note: \$109 of the course fee is for medical supplies and is non-refundable.

IDMS 200 Sonographic Introduction

Credit Hours: 2 / Billing Hours: 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 is required.
- Placement Score: Reading Level 5 and Writing Level 6
- Corequisite Course: IDMS 170 and IDMS 270

IDMS 201 General Sonography I: Abdomen

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.5 in (IDMS 170 and IDMS 200 and IDMS 270)
- Placement Score: None
- Corequisite Course: IDMS 202 and IDMS 234 and IDMS 271 and IDMS 280
- Course Note: \$109 of the course fee is for medical supplies and is non-refundable.

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

IDMS 202 OB/GYN Sonography I

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.5 in (IDMS 170 and IDMS 200 and IDMS 270)
- Placement Score: None
- Corequisite Course: IDMS 201 and IDMS 234 and IDMS 271 and IDMS 280
- Course Note: \$109 of the course fee is for medical supplies and is non-refundable.

IDMS 234 Sonographic Physics

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.5 in (IDMS 170 and IDMS 200 and IDMS 270)
- Placement Score: None
- Corequisite Course: IDMS 201 and IDMS 202 and IDMS 271 and IDMS 280

IDMS 245 Sonographic Instrumentation

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.5 in (IDMS 201 and IDMS 202 and IDMS 234 and IDMS 271 and IDMS 280)
- Placement Score: None
- Corequisite Course: IDMS 265 and IDMS 266 and IDMS 281

2023-2024 Course Descriptions

IDMS 250 Vascular Technology I

Credit Hours: 6 / Billing Hours: 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 the circulatory system and vascular anatomy including, carotid arteries, intracranial blood vessels, upper and lower extremity veins, and penis. RDMS or RT(S) credential or graduated from an accredited ultrasound program and current sonography employment is required. (F)

- Prerequisite Course: None. Program Approval is required.
- Placement Score: None
- Corequisite Course: IDMS 255
- Course Note: \$275 of the course fee is for medical supplies and is non-refundable.

IDMS 251 Vascular Technology II

Credit Hours: 6 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.5 in IDMS 250. Program Approval is required.
- Placement Score: None
- Corequisite Course: IDMS 256

IDMS 255 Vascular Scan Lab I

Credit Hours: 2.5 / Billing Hours: 4

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. ARDMS or RT(S) credential or graduated from an accredited ultrasound program and current sonography employment is required. (F)

- Prerequisite Course: None. Program Approval is required.
- Placement Score: None
- Corequisite Course: IDMS 250
- Course Note: \$275 of the course fee is for medical supplies and is non-refundable.

1160

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

IDMS 256 Vascular Scan Lab II

Credit Hours: 2.5 / Billing Hours: 4

Students will learn scanning and sonographic positioning as well as imaging techniques in color and spectral Doppler, plethysmography 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. (Sp)

- Prerequisite Course: Minimum 2.5 in IDMS 255. Program Approval is required.
- Placement Score: None
- Corequisite Course: IDMS 251

IDMS 265 General Sonography II

Credit Hours: 4 / Billing Hours: 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 and IDMS 202 and IDMS 234 and IDMS 271 and IDMS 280)
- Placement Score: None
- Corequisite Course: IDMS 245 and IDMS 266 and IDMS 281

IDMS 266 OB/GYN Sonography II

Credit Hours: 4 / Billing Hours: 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 201 and IDMS 202 and IDMS 234 and IDMS 271 and IDMS 280)
- Placement Score: None
- Corequisite Course: IDMS 245 and IDMS 265 and IDMS 281

2023-2024 Course Descriptions

IDMS 270 Sonographic Positioning I

Credit Hours: 2.5 / Billing Hours: 4

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, inferior vena cava and related arteries. (Su)

- Prerequisite Course: None. Admission to Diagnostic Medical Sonography Program is required.
- Placement Score: Reading Level 5 and Writing Level 6
- Corequisite Course: IDMS 170 and IDMS 200
- Course Note: \$109 of the course fee is for medical supplies and is non-refundable.

IDMS 271 Sonographic Positioning II

Credit Hours: 1.5 / Billing Hours: 2

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 170 and IDMS 200 and IDMS 270)
- Placement Score: None
- Corequisite Course: IDMS 201 and IDMS 202 and IDMS 234 and IDMS 280
- Course Note: \$109 of the course fee is for medical supplies and is non-refundable.

IDMS 280 Clinical Experience I

Credit Hours: 6 / Billing Hours: 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 Course: Minimum 2.5 in (IDMS 170 and IDMS 200 and IDMS 270)
- Placement Score: None
- Corequisite Course: IDMS 201 and IDMS 202 and IDMS 234 and IDMS 271
- Course Note: \$100 of the course fee is for supplies and is non-refundable.

2023-2024 Course Descriptions

IDMS 281 Clinical Experience II

Credit Hours: 7 / Billing Hours: 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 201 and IDMS 202 and IDMS 234 and IDMS 271 and IDMS 280)
- Placement Score: None
- Corequisite Course: IDMS 245 and IDMS 265 and IDMS 266

IDMS 282 Clinical Experience III

Credit Hours: 8 / Billing Hours: 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 Course: Minimum 2.5 in (IDMS 245 and IDMS 265 and IDMS 266 and IDMS 281)
- Placement Score: None

IDMS 295 DMS Special Topics

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

2023-2024 Course Descriptions

INSU 105 Prin of Managing Evolving Risk

Credit Hours: 3 / Billing Hours: 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. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)
- Course Note:
 - 1) Prepares students for the AINS 101 and CPCU 500 national exam administered by The Institutes.
 - 2) Students who achieve a minimum grade of 3.0 may waive the CPCU 500 national exam.

INSU 110 Personal Insurance

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - 1) Students who achieve a grade of 3.0 or above may waive the CPCU 553 national exam.
 - 2) Prepares students for the AINS 22 national exam.

2023-2024 Course Descriptions

INSU 125 Commercial Insurance

Credit Hours: 3 / Billing Hours: 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. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - 1) Students who achieve a grade of 3.0 or above may wave the CPCU 557 national exam.
 - 2) Prepares students for the AINS 23 national exam.

INSU 175 Intro to Financial Advising

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Course Note: Students who achieve a grade of 3.0 or above may wave the CPCU 556 national exam.

INSU 250 Claims and Underwriting

Credit Hours: 3 / Billing Hours: 3

This course is an overview of the principles and practices of claims and commercial underwriting. (Sp)

- Prerequisite Course: Minimum 3.0 in (INSU 105 or INSU 125)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - 1) Students who achieve a grade of 3.0 or above may wave the AU 60 national exam.
 - 2) Prepares students for the AIC 30 CPCU exam.

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2023-2024 Course Descriptions

INSU 260 **Life/Health Insur Licensing** **Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

INSU 270 **Property/Casualty Insur Licens** **Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

INSU 285 **Insurance Agency Operations** **Credit Hours: 3 / Billing Hours: 3**

This course is an overview of agency operations including financial, marketing, management, IT, regulations, leadership, time management, understanding risk control, and strategic operations. This course will be a useful tool as students prepare for the CPCU 520 national exam, administered by The Institutes. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

INSU 295 **Insurance Internship** **Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (INSU 105 or INSU 110 or INSU 125)
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

IRXT 105 Introduction to Imaging

Credit Hours: 2 / Billing Hours: 2

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: None. Admission to the Radiologic Technology Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 5 or minimum 2.5 in (MATH 119 or STAT 170 or STAT 215)]
- Course Note: \$85 of the course fee is for medical supplies and is non-refundable.

IRXT 111 Radiographic Positioning I

Credit Hours: 6 / Billing Hours: 6

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
- Course Note: \$5 of the course fee is for medical supplies and is non-refundable.

IRXT 112 Radiographic Positioning II

Credit Hours: 6 / Billing Hours: 6

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 all previous required IRXT courses.
- Placement Score: None
- Course Note: \$5 of the course fee is for medical supplies and is non-refundable.

2023-2024 Course Descriptions

IRXT 116 Patient Care in Radiography

Credit Hours: 2 / Billing Hours: 2.5

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/BLS certification included. (F)

- Prerequisite Course: None. Admission to the Radiologic Technology Program is required.
- Placement Score: None
- Course Note: \$40 of the course fee is for medical supplies and is non-refundable.

IRXT 123 Radiographic Independent Study

Credit Hours: 1 to 4 / Billing Hours: 1 to 7

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

IRXT 140 Image Analysis

Credit Hours: 2 / Billing Hours: 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 all previous required IRXT courses.
- Placement Score: None

2023-2024 Course Descriptions

IRXT 144 Digital Imaging and Exposure

Credit Hours: 2 / Billing Hours: 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 all previous required IRXT courses.
- Placement Score: None
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

IRXT 170 Clinical Practice I

Credit Hours: 4 / Billing Hours: 4

This course is the first in a two-semester sequence of clinical application in radiography designed with required and specific patient care and clinical radiographic examination competencies under direct supervision of an ARRT Registered Technologist. Students must obtain a minimum number of competencies to progress to the next semester. Performance standards are used to evaluate student achievement. (Sp)

- Prerequisite Course: Minimum 2.5 in all previous required IRXT courses.
- Placement Score: None

IRXT 172 Clinical Practice II

Credit Hours: 6 / Billing Hours: 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. A minimum number of clinical competencies must be obtained corresponding to completed didactic work to be eligible to continue in the program. Performance standards are used to evaluate the student's achievement. (Su)

- Prerequisite Course: Minimum 2.5 in all previous required IRXT courses.
- Placement Score: None

2023-2024 Course Descriptions

IRXT 200 Intro to Radiologic Pathology

Credit Hours: 2 / Billing Hours: 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 all previous required IRXT courses.
- Placement Score: None

IRXT 214 Comprehensive Experience I

Credit Hours: 6 / Billing Hours: 6

First in a two-semester sequence of advanced clinical application in radiography. Clinical experience is provided under the direct/indirect supervision of an ARRT Registered Technologist. A minimum number of clinical competencies must be obtained corresponding to appropriate levels of supervision to be eligible to progress to the next semester. Students must demonstrate maintenance of previously obtained competencies. Performance standards are used to evaluate the student's achievement. (F)

- Prerequisite Course: Minimum 2.5 in all previous required IRXT courses.
- Placement Score: None

IRXT 215 Comprehensive Experience II

Credit Hours: 6 / Billing Hours: 6

Final semester in advanced clinical application in radiography. Clinical experience is provided under the direct/indirect supervision of an ARRT Registered Technologist. Students are expected to demonstrate maintenance of previously obtained competencies. Students meeting established criteria may be eligible to participate in observing additional modalities. All mandatory/elective competencies must be completed this semester to be ARRT Registry eligible. Performance standards are used to evaluate the student's achievement. (Sp)

- Prerequisite Course: Minimum 2.5 in all previous required IRXT courses.
- Placement Score: None

2023-2024 Course Descriptions

IRXT 222 Radiobiology and Protection

Credit Hours: 2 / Billing Hours: 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 all previous required IRXT courses.
- Placement Score: None
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

IRXT 224 Radiologic Physics

Credit Hours: 4 / Billing Hours: 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 all previous required IRXT courses.
- Placement Score: None
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

IRXT 240 Sectional Anatomy

Credit Hours: 2 / Billing Hours: 2

This course provides an overview of transverse, coronal, and sagittal sectional anatomy of the human body. Special emphasis is placed on a study of the head and brain, thorax, abdomen, and pelvis. The shoulder, elbow, hip, and knee are also examined. (Su)

- Prerequisite Course: Minimum 2.5 in BIOL 145 or (BIOL 201 and BIOL 202)
- Placement Score: Reading Level 5 and Writing Level 6 and [Math Level 5 or (minimum 2.5 in MATH 119 or STAT 170 or STAT 215)]

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2023-2024 Course Descriptions

IRXT 280 Radiologic Tech Board Review Credit Hours: 2 / Billing Hours: 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. Students are required to successfully pass a mock registry exam to complete this course. (Sp.)

- Prerequisite Course: Minimum 2.5 in all previous required IRXT courses
- Placement Score: None
- Course Note: \$180 of the course fee is non-refundable.

IRXT 295 Radiologic Tech Special Topics Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

ISCI 121 Physical Science Concepts Credit Hours: 4 / Billing Hours: 6

A general science course focusing on the fundamental behavior of matter and energy, incorporating topics from physical science and earth science. Science processes, methods, and reasoning skills are emphasized throughout. Experiments and hands-on activities are integrated with lecture topics. (F,Sp)

- Prerequisite Course: None
- Placement Score: 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.

2023-2024 Course Descriptions

ISCI 122 Integrate Sci for Education II Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Recommended: ISCI 121
- Course Note: One option for the required class project involves a 12-hour (1-hour per week) experience in an elementary school classroom.

ISCI 131 Integrated Physical Science Credit Hours: 4 / Billing Hours: 6

A general education course designed to provide students with a basic understanding of the methods and applications of physical science. Topics include discussion about what science is, basic chemistry, energy and motion, the hydrologic cycle, earth science, 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 Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

ISCI 245 S.T.E.M. Workplace Practices Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (MATH 119 or STAT 170) or MATH 109 concurrently or Math Level indicated below
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Recommended: A science laboratory course

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

JAPN 121 Elementary Japanese I

Credit Hours: 4 / Billing Hours: 4

This is the 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. Aspects of Japanese culture are introduced through multi-media presentations. Hiragana and Katakana syllabaries and basic Kanji are introduced. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

JAPN 122 Elementary Japanese II

Credit Hours: 4 / Billing Hours: 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. Additional Kanji are introduced. Aspects of Japanese culture are introduced through multi-media presentations. (Sp,Su)

- Prerequisite Course: Minimum 2.0 in JAPN 121 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

JAPN 201 Intermediate Japanese I

Credit Hours: 4 / Billing Hours: 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. Additional Kanji are introduced. Various aspects of Japanese culture are introduced through multi-media presentations. (F)

- Prerequisite Course: Minimum 2.0 in JAPN 122 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

2023-2024 Course Descriptions

JAPN 202 **Intermediate Japanese II** **Credit Hours: 4 / Billing Hours: 4**

Continuation of JAPN 201. Includes more advanced grammar, intensive vocabulary building, writing composition, reading contemporary materials, discussions, and student presentations on Japanese language or culture. Additional Kanji are introduced. Natural and practical communication is emphasized. Various aspects of Japanese culture are introduced through multi-media presentations. (Sp)

- Prerequisite Course: Minimum 2.0 in JAPN 201 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

JRNL 151 **Newswriting and Reporting** **Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in ENGL 121 or ENGL 131
- Placement Score: Reading Level 5 and Writing Level 8
- Recommended: Computer and/or keyboarding experience

JRNL 254 **Opinion Writing** **Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (JRNL 151 or ENGL 121 or ENGL 131)
- Placement Score: Reading Level 5 and Writing Level 8
- Recommended: Computer and/or keyboarding experience

LABR 200 **Intro to Labor Relations** **Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

LABR 204 Employment Law for Managers Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

LEAD 110 Leadership Development I Credit Hours: 2 / Billing Hours: 2

LEAD 110 will help students develop leadership skills through study, observation, and application. Assists students in increasing their understanding of themselves, and the theories and techniques of leadership. Course topics include developing a personal leadership philosophy, leading by serving, understanding ethical leadership, articulating a vision, team building and leading with goals. (F)

- Prerequisite Course: None. Department Approval Required
- Placement Score: None

LEAD 111 Leadership Development II Credit Hours: 2 / Billing Hours: 2

LEAD 111 will help students develop leadership skills through study, observation, and application. Assists students in increasing their understanding of themselves, and the theories and techniques of leadership. Course topics include making decisions as a leader, guiding others through conflict, realizing change, and empowering others as a servant leader. (Sp)

- Prerequisite Course: Minimum 2.0 in LEAD 110
- Placement Score: None

LEGL 110 Editing Legal Documents Credit Hours: 2 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

LEGL 115 Introduction to Legal Studies

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 125 Legal Research and Writing I

Credit Hours: 3 / Billing Hours: 3

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 Score: (Reading Level 5 and Writing Level 6) or Post-Bachelor student enrolled in 0744 program

LEGL 160 Critical Thinking in Law

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: None

1177

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

LEGL 207 eDiscovery

Credit Hours: 3 / Billing Hours: 3

This course will explore the rapidly developing role of software in the area of legal data, eDiscovery, and information governance. An in-depth look at the role of software in the litigation lifecycle from data collection and document review to production and presentation at a trial will be taken. The course will explore the technology used in a litigation support department and by litigation teams in the acquisition of data and eDiscovery processing. (F)

- Prerequisite Course: Minimum 2.0 in CITF110 or Post Bachelor Student enrolled in 0744 Program
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 211 Tort Law

Credit Hours: 2 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in LEGL 115 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 212 Litigation Procedures

Credit Hours: 3 / Billing Hours: 3

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. (Sp)

- Prerequisite Course: Minimum 2.0 in (LEGL 115 and LEGL 211)
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 215 Business Law-Basic Principles

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: None

2023-2024 Course Descriptions

LEGL 216 Commercial Transactions

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in LEGL 215
- Placement Score: None

LEGL 217 Business Organizations

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in LEGL 215
- Placement Score: None

LEGL 218 Litigation Specialties

Credit Hours: 3 / Billing Hours: 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. (As needed)

- Prerequisite Course: Minimum 2.0 in LEGL 115 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 219 Adv Busn Law for Acct Majors

Credit Hours: 4 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in LEGL 215
- Placement Score: None
- Recommended: Accounting background

2023-2024 Course Descriptions

LEGL 221 Real Estate Transactions

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

LEGL 222 Probate Law and Procedure

Credit Hours: 3 / Billing Hours: 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. (F)

- Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 223 Domestic Relations

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in (LEGL 115 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 224 Administrative Law

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

1180

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

LEGL 225 Legal Research and Writing II Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

LEGL 227 Bankruptcy and Collections Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

LEGL 228 Computer Appl for the Law Ofc Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (CITF 110 or CITA 119) or Post Bachelor Student enrolled in 0744 program
- Placement Score: Reading Level 5 and Writing Level 6

LEGL 229 Immigration Law Credit Hours: 3 / Billing Hours: 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. (As Needed)

- Prerequisite Course: Minimum 2.0 in LEGL 115 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6

1181

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

LEGL 251 Paralegal Independent Study Credit Hours: 1 to 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: 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.

LEGL 270 Paralegal Certification Prep Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (LEGL 210) and [(LEGL 216 and LEGL 217 and LEGL 225 and LEGL 228) or concurrently]
- Placement Score: 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.

LEGL 280 Paralegal Internship Credit Hours: 3 / Billing Hours: 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 Score: 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.

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

LEGL 295 Special Topics in Paralegal Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

LING 230 Introduction to Linguistics Credit Hours: 3 / Billing Hours: 3

Examines human language from the perspective of contemporary American linguistics: generative morphology, syntax, phonetics and phonology, and semantics. Special attention will be given to the structure of English, first and second language acquisition, regional and social variations, and the brain and language perception and production. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5

MATH 097 Support for MATH119 or STAT170 Credit Hours: 2 / Billing Hours: 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 Score: [Reading Level 5 and Writing Level 4 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently)] and (SAT Math 400-510 or ACT Math 15-19 or CPT Algebra 50-76 or QRAS 225-259)
- Corequisite Course: Math 119 or Stat 170
- Course Note:
 - 1) This co-support course, MATH 097, must be taken during the same semester as the college level course (MATH 119 or STAT 170). Contact your instructor to discuss options if either course is dropped during the semester or if a passing grade is not achieved at the end of the semester.
 - 2) A graphing calculator from the TI-83/84 series is required for course work.
 - 3) Class participation is strongly recommended; participation is a significant and important part of the course to enable success in MATH 119 and STAT 170.

2023-2024 Course Descriptions

MATH 098 Support for MATH 120

Credit Hours: 2 / Billing Hours: 2

This course provides embedded academic support for students enrolled in MATH 120. Topics include a study of relations and functions, inequalities, algebraic expressions and equations, with a special emphasis on linear and quadratic expressions and equations, and any additional topics, as needed, to support the content of MATH 120. (F,Sp)

- Prerequisite Course: Minimum 2.0 in MATH 105 or MATH 106 or Math Placement Score indicated below or Department Approval
- Placement Score: (Reading Level 5 and Writing Level 4) or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) and (Math Level 4-5 or SAT Math 400-540 or ACT Math 15-21 or CPT CLM 45-54 or Accuplacer QRAS 241-300 or Accuplacer AAF 235-244 or High School GPA of 2.5 - 2.99 within 10 years)
- Corequisite Course: MATH 120
- Course Note:
 - 1) This co-support course, MATH 098, must be taken during the same semester as MATH 120. Contact your instructor to discuss options if either course is dropped during the semester or if a passing grade is not achieved at the end of the semester.
 - 2) A graphing calculator from the TI-83/84 series is required for course work.
 - 3) Class participation is strongly recommended; participation is a significant and important part of the course to enable success in MATH 120.

2023-2024 Course Descriptions

MATH 106 Math Literacy with Review

Credit Hours: 6 / Billing Hours: 6

Provides the skills needed for selected Core Math courses. Topics include numeracy, mathematical thinking and investigations, proportional reasoning, basic algebraic concepts, functions (linear and 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 Score: 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 200-300)
- Course Note:
 - 1) MATH 106 prepares students for MATH 109, MATH 117, MATH 118, MATH 119, and STAT 170.
 - 2) Information about course materials will be available to students the first day of class or earlier from your instructor. All enrolled students are required to purchase the workbook bundle through LCC's bookstore to ensure a valid access code is obtained.
 - 3) A graphing calculator from the TI-83/84 family is required for course work.

2023-2024 Course Descriptions

MATH 109 Foundations of Algebra

Credit Hours: 4 / Billing Hours: 6

Topics include using properties of real numbers and exponents to simplify polynomials, radicals, rational and quadratic expressions; solving linear, rational, absolute value, radical, and quadratic equations; graphing linear and quadratic functions; solving linear and absolute value inequalities; evaluating functions and rational exponents; solving systems of linear equations; and performing operations with complex numbers. (F,Sp,Su)

- Prerequisite Course: Math Placement Score indicated below or Department Approval
- Placement Score: (Reading Level 5 and Writing Level 4) or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) and (CPT Algebra 50-76 or ACT Math 15-19 or SAT Math 400-530 or Accuplacer QRAS score 225-271 or Accuplacer AAF score 220-234)
- Course Note:
 - 1) MATH 109 combines a review of basic algebra along with the content of Intermediate Algebra designed for students who need MATH 120.
 - 2) 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.
 - 3) A graphing calculator from the TI-83/84 family is required for course work.
 - 4) This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

MATH 114 Technical Math I

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (MATH 105 or MATH 106) or Math Level indicated below
- Placement Score: Reading Level 4 and Math Level 4
- Course Note:
 - 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.

MATH 115 Technical Math II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in MATH 114 or Math Placement Score indicated below
- Placement Score: Reading Level 5 and Math Level 5
- Course Note: Graphing calculator required; TI-83/84 series calculator highly recommended.

2023-2024 Course Descriptions

MATH 117 Math for Business

Credit Hours: 4 / Billing Hours: 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: Minimum 2.0 in (MATH 105 or MATH 106 or MATH 107) or Math Placement Score indicated below
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 5
- Course Note: Graphing calculator required; TI-83/84 series calculator highly recommended.

MATH 118 The Art of Geometry

Credit Hours: 3 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: Minimum 2.0 in (MATH 105 or MATH 106 or MATH 109) or Math Level indicated below
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 5
- Course Note: Graphing calculator required; TI-83/84 series calculator highly recommended.

2023-2024 Course Descriptions

MATH 119 Math - Applications for Living

Credit Hours: 4 / Billing Hours: 4

This is a quantitative reasoning course that covers concepts in measurement, geometry, statistics, probability, and algebra, with a focus on applications for real life. Topics include, but aren't limited to, unit analysis, growth and decay, finance applications, and linear and exponential modeling. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (MATH 105 or MATH 106 or MATH 107) or (MATH 097 concurrently) or Math Level indicated below
- Placement Score: (Reading Level 5 and Writing Level 4) or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) and Math Level 5
- Course Notes:
 - 1) Graphing calculator required; TI-83/84 series calculator highly recommended.
 - 2) A GED score of 165 or higher within 10 years also allows a student take Math 119.
 - 3) This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

MATH 120 College Algebra

Credit Hours: 4 / Billing Hours: 4

A course in algebra that studies families of functions and their graphs, with an emphasis on applications in finance, business, and life, social, and physical sciences. Topics include relations and functions; properties and graphs of linear, quadratic, polynomial, rational, exponential, and logarithmic functions; algebra of functions; solving equations and inequalities; systems of linear equations; and sequences and series. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (MATH 109) within 2 years or MATH 098 concurrently or Math Level 6 as noted below
- Placement Score: Reading Level 5 and Writing Level 4 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) and (Math Level 6 within 2 years)
- Course Notes:
 - 1) A graphing calculator from the TI-83/84 family is required for course work. TI-84 Plus CE is recommended.
 - 2) A GED score of 165 or higher within 10 years also allows a student take Math 120.
 - 3) This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

MATH 126 Precalculus

Credit Hours: 5 / Billing Hours: 5

This is a five-credit course on college algebra and trigonometry. Topics include the definition and concept of functions; equations and inequalities; properties and graphs of polynomial, rational, absolute value, exponential, logarithmic, trigonometric, and inverse trigonometric functions; conic sections; and systems of non-linear equations. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in MATH 120 within 2 years or Math Level indicated below
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 7 with 2 years or (AAF 260-269 or SAT Math 620-800, within 2 years) or Department Approval
- Course Note:
 - A graphing calculator from the TI-83/84 series is required for course work.
 - This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

MATH 141 Calculus with Applications

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and (Math Level 7 within 2 years)
- Course Note: A graphing calculator from the TI-83/84 Series is required for course work.

2023-2024 Course Descriptions

MATH 151 Calculus I

Credit Hours: 4 / Billing Hours: 4

This is the first course in a three-semester calculus sequence. Topics include limits, continuity, parametric curves, derivatives of algebraic, trigonometric, exponential, and logarithmic functions, implicit differentiation, linear approximation and differentials, L'Hospital's rule, Riemann sums, integration using the Fundamental Theorem of Calculus and the substitution rule. Applications of differential and integral calculus to problems in math, natural, and social sciences are presented. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (MATH 122 or MATH 126) within 2 years or Math Level 9 noted below
- Placement Score: Reading Level 5 and Writing Level 6 and (Math Level 9 within 2 years)
- Course Note:
 - A graphing calculator from the TI-83/84 series is required for course work; TI-89 may be used.
 - This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

MATH 152 Calculus II

Credit Hours: 4 / Billing Hours: 4

This is the second course in a three-semester calculus sequence. Topics include integral calculus and its applications to real world problems, infinite sequences and series, tests for convergence of series, Taylor and Maclaurin series, power series, representations of functions, 3D-rectangular coordinate system, polar coordinates, vectors and vector operations, and equations of lines and planes in 3D space. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (MATH 151 or MATH 161) within 2 years
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - A graphing calculator from the TI-83/84 series is required for course work; TI-89 may be used.
 - This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

MATH 201 Math for Elementary Teachers I Credit Hours: 4 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in (MATH 109 within 2 years) or Math Level indicated below
- Placement Score: Reading Level 5 and Writing Level 6 and (Math Level 6 within 2 years)
- Course Note: A graphing calculator from the TI-83/84 series is required for course work.

MATH 202 Math for Elementary Teacher II Credit Hours: 4 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in MATH 201 within 2 years
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: A graphing calculator from the TI-83/84 series is required for course work.

2023-2024 Course Descriptions

MATH 253 Calculus III

Credit Hours: 4 / Billing Hours: 4

This is the last course in a three-semester calculus sequence that covers multivariable calculus and vector analysis. Topics include vector algebra, curves and surfaces in 3D-space, cylindrical and spherical coordinate systems, vector-valued functions, partial derivatives and gradients, multiple integrals, vector fields, line integrals, and surface integrals, including the theorems of Green and Stokes, and Divergence Theorem. Applications for all these topics are presented.
(F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (MATH 152 or MATH 162) within 2 years
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - A graphing calculator from the TI-83/84 series is required for course work; TI-89 may be used.
 - This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

MATH 254 Intro to Differential Equation

Credit Hours: 4 / Billing Hours: 4

An introduction to ordinary differential equations. Topics include separable, exact, linear, and Bernoulli equations, direction fields, higher order linear equations, undetermined coefficients, variation of parameters, series solutions, Laplace transforms, systems of differential equations, systems of first order linear equations, nonlinear equations and stability, numerical methods, Fourier series, and separable PDEs. (F,Sp)

- Prerequisite Course: Minimum 2.0 in MATH 253 within 2 years
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note:
 - Graphing calculator required; TI-89 is recommended.
 - This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

MATH 260 **Linear Algebra**

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in MATH 152 within 2 years
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

MEDA 110 **Intro MA Med Terms & Pathology**

Credit Hours: 5 / Billing Hours: 5

Students will be introduced to medical terminology, basic human anatomy, and disease conditions which are essential for a career in medical assisting. (F)

- Prerequisite Course: None. Program approval is required.
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: MEDA 135 and MEDA 156
- Course Note:
 - The Medical Assistant program is a yearlong, cohort program that begins every Fall semester; students will complete the program in three consecutive semesters, Fall 2023 through Summer 2024.
 - Seats in this program are limited.
 - To enroll, students must be 18 years of age or older by the start of classes and must submit a Medical Assistant application along with required supporting documentation.
 - Online applications are accepted from March 1st through June 25th and are available in the Medical Assistant section on the [HHS Advising Guide site](http://www.lcc.edu/hhs/advising-guides.html) (www.lcc.edu/hhs/advising-guides.html).
 - Applicants are encouraged to apply early as enrollment is on a first come, first served basis.
 - Once admitted to the program, students will be required to complete an [ICHAT](#) background check (there is a fee for this service, instructions provided upon acceptance to program) and attend a mandatory program orientation, which typically occurs mid-July.

1195

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MEDA 156 MA Clinical Procedures I

Credit Hours: 7 / Billing Hours: 11

Within a clinical classroom, the student medical assistant will obtain vital signs, patient history, assist with general and specialty exams, learn how to administer medications, and learn how to educate patients. Students will also learn to apply medical terminology to the different specialties for each body system. (F)

- Prerequisite Course: None. Program approval is required.
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: MEDA 110 and MEDA 135

MEDA 166 MA Clinical Procedures II

Credit Hours: 5 / Billing Hours: 7

The student medical assistant will learn how to obtain laboratory specimens, perform point-of-care testing, apply outpatient treatments, and assist with clinical procedures typically performed in a clinical office setting. Obtaining and processing blood and body fluid specimens are a large portion of this course. (Sp)

- Prerequisite Course: Minimum 2.5 in (MEDA 110 and MEDA 135 and MEDA 156)
- Placement Score: None
- Corequisite Course: MEDA 126 and MEDA 145 and NCHE 102

MEDA 175 MA Certification Review

Credit Hours: 3 / Billing Hours: 3

In this capstone course, the student will review both clinical and administrative skills to prepare to take the Registered Medical Assistant (RMA) examination through the American Medical Technologist (AMT) certification agency. The student will also learn professional employability skills, including resume writing and effective interviewing techniques. (Su)

- Prerequisite Course: Minimum 2.5 in (MEDA 126 and MEDA 145 and MEDA 166)
- Placement Score: None
- Corequisite Course: MEDA 177

2023-2024 Course Descriptions

MEDA 177 MA Practicum Immersion

Credit Hours: 3 / Billing Hours: 3

The practicum requires placement at an ambulatory care facility. Students will be exposed to administrative and clinical skills required of the profession and will perform activities under the direct supervision of a preceptor. A minimum of 160 clock hours is required. (Su)

- Prerequisite Course: Minimum 2.5 in (MEDA 126 and MEDA 145 and MEDA 166)
- Placement Score: None. Program approval is required.
- Corequisite Course: MEDA 175
- Course Note: Minimum age of 18 required to enroll in this course. Students will be charged a \$50 fee for ACEMAPP required documentation.

METD 100 Basic Mechanical Drafting

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]

METD 105 PC Applications for Technology

Credit Hours: 3 / Billing Hours: 4

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 Course: None
- Placement Score: None

2023-2024 Course Descriptions

METD 110 Mechanical CAD Drafting I

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

METD 111 Mechanical CAD Drafting II

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4

METD 130 Geometric Dimension/Tolerance

Credit Hours: 4 / Billing Hours: 6

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. (As Needed)

- Prerequisite Course: Minimum 2.0 in METD 100 or Mechanical Drafting Placement Test 80%
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

METD 150 Industrial Blueprint Reading

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: None
- Recommended: METD 100

METD 170 Special Topics/Eng & Design

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

METD 220 Basic Unigraphics/NX

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4

METD 221 Advanced Unigraphics/NX

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and Math Level 5

1200

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

METD 240 Basic NX Machining

Credit Hours: 4 / Billing Hours: 5

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 Course: Minimum 2.0 in (METD 220 and METM 108)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4
- Course Note: This course was formerly METM 240

METD 250 Detailing Assembly Drawings

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 4 and Writing Level 4 and Math Level 4

METD 265 Basic CAD FEA Simulation

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METD 221 or METD 250)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4

METD 295 Engineering/Design Project Lab

Credit Hours: 1 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

1201

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

METM 100 Manufacturing Processes

Credit Hours: 3 / Billing Hours: 4.5

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 Course: None
- Placement Score: Reading Level 3 and Writing Level 4
- Recommended: MATH 105 or MATH 106 or Math Level 4

METM 108 Machine Tool Operations

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 3 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

METM 112 Introduction to CNC Machining

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 3 and Writing Level 4 and Math Level 4

METM 150 Advanced CNC Machining

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METM 110 or METM 112)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4

1202

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

METM 170 Special Topics/Precision Mach Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

METM 171 Special Topics/Machining Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

METM 190 Metallurgy and Heat Treatment Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 5 and Writing Level 6 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]
- Course Note: High School Chemistry or CHEM 125

METM 195 Quality/Metrology/Inspection Credit Hours: 2 / Billing Hours: 3

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 Course: Minimum 2.0 in [METD 130 and (METM 108 or METM 110)]
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4

1203

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

METM 220 Basic Mastercam

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METM 108 or METM 110)
- Placement Score: Reading Level 4 and Writing Level 4 and Math Level 4

METM 221 Advanced Mastercam

Credit Hours: 4 / Billing Hours: 6

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 Score: Reading Level 3 and Writing Level 4 and Math Level 4

METM 295 Precision Machine Project Lab

Credit Hours: 1 to 4 / Billing Hours: 1 to 8

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 Course: None. Department Approval is required.
- Placement Score: None

METS 110 Mechanical Power Transmissions

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or TECH 102 or WELD 102 or concurrently)
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

1204

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

METS 115 Intro to Mechanical Systems

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

METS 120 Industrial Pneumatics

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102) or concurrently
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

METS 125 Intro to Hydraulics/Pneumatics

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102 or concurrently)
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

METS 130 Industrial Hydraulics

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102 or concurrently)
- Placement Score: Reading Level 4 and Writing Level 4 and [Math Level 4 or minimum 2.0 in (MATH 105 or MATH 106)]

METS 140 Rigging

Credit Hours: 3 / Billing Hours: 4.5

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)

- Prerequisite Course: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102) or concurrently
- Placement Score: 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.

METS 145 Automated Systems

Credit Hours: 3 / Billing Hours: 4.5

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 Course: Minimum 2.0 in [ELTE 109 and (ELTE 130 or ELTE 131 or concurrently) and (METS 125 or concurrently)]
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3

2023-2024 Course Descriptions

METS 160 Introduction to Robotics

Credit Hours: 3 / Billing Hours: 4.5

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 Course: Minimum 2.0 in (METS 102 or ELTE 102 or DCTM 102 or HVAC 102 or WELD 102) or concurrently
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 3 or Minimum 2.0 in (MATH 105 or MATH 106)]

METS 170 Special Topics/Mechanical Sys Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: Determined by Section

METS 210 Lubrication and Bearings

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (METS 102 or DCTM 102 or ELTE 102 or HVAC 102 or WELD 102) or concurrently
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

2023-2024 Course Descriptions

METS 250 Gen. Prevent/Predictive Maint Credit Hours: 3 / Billing Hours: 4.5

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 Course: Minimum 2.0 in (METS 102 or ELTE 102 or DCTM 102 or HVAC 102 or WELD 102) or concurrently
- Placement Score: 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.

METS 260 Advanced Robotics Capstone Credit Hours: 3 / Billing Hours: 4.5

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 Course: Minimum 2.0 in (ELTE 260 and METM 108 and METS 125 and METS 160)
- Placement Score: Reading Level 3 and Writing Level 4 and Math Level 4
- Course Note: \$20 of the Course Fee is non-refundable.

METS 290 Manufacturing Internship Credit Hours: 2 to 4 / Billing Hours: 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 Course: None. Department Approval is required
- Placement Score: None
- Recommended: 2.5 GPA or greater

2023-2024 Course Descriptions

METS 295 Mechanical Systems Project Lab Credit Hours: 1 to 4 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None

MGMT 150 Managing Customer Relations Credit Hours: 3 / Billing Hours: 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 customer's 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

MGMT 200 Creative Thinking for Business Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: Have taken two or more BUSN or MGMT courses, or have business experience

MGMT 201 Time Management for Business Credit Hours: 1 / Billing Hours: 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,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 4 and Writing Level 4

1209

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MGMT 202 Managing Difficult People

Credit Hours: 1 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

MGMT 203 Managing Meetings

Credit Hours: 1 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

MGMT 223 Supervisory Skills

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 6

1210

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MGMT 224 Human Resource Management

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 6

MGMT 225 Principles of Mgmt/Leadership

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 (or Reading Level 4 and ENGL 099 concurrently) and Writing Level 6

MGMT 227 Training/Development for Busn

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MGMT 224 or concurrently
- Placement Score: Reading Level 5 and Writing Level 6

1211

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MGMT 228 Organization Behavior

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently) and Writing Level 6 Recommended: MGMT 223 or MGMT 224 or MGMT 225

MGMT 229 Compensation Management

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MGMT 224
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: LABR 204

MGMT 231 Developing and Leading Teams

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

1212

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MGMT 234 Diversity in the Workplace

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 (or Reading Level 4 and ENGL 099 concurrently) and Writing Level 6

MGMT 235 Independent Study/Manage/Lead

Credit Hours: 1 to 3 / Billing Hours: 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 Course: None. Department Approval Required
- Placement Score: None

MGMT 237 Managing/Continual Improvement

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently) and Math Level 4

2023-2024 Course Descriptions

MGMT 280 Mgmt/Leadership Internship

Credit Hours: 3 / Billing Hours: 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 their own job only if the duties are new, management or leadership related, and provide an appropriate learning situation. (F)

- Prerequisite Course: None. Department Approval Required
- Placement Score: None
- Recommended: Have completed a minimum of 30 Credits.

MGMT 300 Leading for Possibility

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

MGMT 304 Organization Development

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

MGMT 329 Advanced Mgmt Communication

Credit Hours: 3 / Billing Hours: 3

This course explores the importance of ethical and effective communication at the managerial and organizational level of organizations. The course examines strategies for more effective listening, oral, and written communication in business. It explores the ways managers can influence positive strategies for overcoming communication obstacles and recognize the benefits of conflict. (F,Sp)

- Prerequisite Course: Minimum 2.0 in (COMM 110 or COMM 120 or COMM 130) or Department Approval
- Placement Score: None

MGMT 332 Ethics: Assumpt for the Future

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

MGMT 335 Managerial Statistics

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MATH 109 or Math Level 6 as noted below
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 6

1215

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MGMT 337 Advanced Human Resource Mgmt Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in MGMT 224 or Department Approval
- Placement Score: Reading Level 5 and Writing Level 6

MGMT 338 Current Topics in Management Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

MGMT 345 Context and Transformation Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

MGMT 346 Managerial Finance

Credit Hours: 3 / Billing Hours: 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 Course: (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)
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: Have taken previous MGMT courses.

MILS 110 Introduction to the Army

Credit Hours: 1 / Billing Hours: 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 Course: None
- Placement Score: None
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

MILS 111 Introduction to the Army-Lab

Credit Hours: 1 / Billing Hours: 2

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. (F)

- Prerequisite Course: None
- Placement Score: None. Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

1217

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MILS 120 Foundations of Army Leadership Credit Hours: 1 / Billing Hours: 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 Course: None
- Placement Score: None. Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

MILS 121 Fndtion of Army Leadership-Lab Credit Hours: 1 / Billing Hours: 2

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. (Sp)

- Prerequisite Course: None
- Placement Score: None. Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

MILS 210 Army Doctrine & Team Develpmnt Credit Hours: 2 / Billing Hours: 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. (F)

- Prerequisite Course: None
- Placement Score: None. Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

1218

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MILS 211 Army Doctrine/Team Develop-Lab Credit Hours: 1 / Billing Hours: 2

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. (F)

- Prerequisite Course: None
- Placement Score: None. Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

MILS 220 Mil Leadership & Decision Making Credit Hours: 2 / Billing Hours: 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. (Sp)

- Prerequisite Course: None
- Placement Score: None; Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

MILS 221 Mil Leadership/Decision Making-Lab Credit Hours: 1 / Billing Hours: 2

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. (Sp)

- Prerequisite Course: None
- Placement Score: None. Department Approval Required.
- Course Note: Call MSU Department of Military Science at (517) 355-1913 for specific days and times.

1219

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MKTG 119 **Mktg/Manage Your Profess Image** **Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

MKTG 120 **Sales** **Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

MKTG 130 **Retailing** **Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4

MKTG 140 **Introduction to Advertising** **Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

1220

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MKTG 200 Principles of Marketing

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: BUSN 118

MKTG 202 Managerial Marketing

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MKTG 200
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: MKTG 204 and Second Year Student

MKTG 204 Marketing Research

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MKTG 200
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

MKTG 210 Marketing on the Internet

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: MKTG 200 and basic understanding of computers and their use on the Internet.

MKTG 221 Consumer Behavior

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

MKTG 229 Public Relations

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 4

MKTG 231 Independent Study in Marketing

Credit Hours: 1 to 3 / Billing Hours: 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 Course: Department Approval

1222

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MKTG 235 Marketing Internship

Credit Hours: 3 / Billing Hours: 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 their 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.

MRIT 200 Professional Prospectus

Credit Hours: 1 / Billing Hours: 0

This 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. Admission to the EPiC Magnetic Resonance Imaging Program is required.
- Placement Score: None
- Corequisite Course: MRIT 229 and MRIT 260

MRIT 201 Computer Apps/Medical Imaging

Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260
- Placement Score: None
- Corequisite Course: MRIT 220 and MRIT 230 and MRIT 261

2023-2024 Course Descriptions

MRIT 220 MR Physics I

Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260
- Placement Score: None
- Corequisite Course: MRIT 201 and MRIT 230 and MRIT 261

MRIT 222 MR Physics II

Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261
- Placement Score: None
- Corequisite Course: MRIT 232 and MRIT 240 and MRIT 262

MRIT 229 Applied Sectional Anatomy

Credit Hours: 3 / Billing Hours: 0

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 Course: None. Admission to the EPiC Magnetic Resonance Imaging Program is required.
- Placement Score: None
- Corequisite Course: MRIT 200 and MRIT 260

2023-2024 Course Descriptions

MRIT 230 MR Procedures and Pathophys I Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260
- Placement Score: None
- Corequisite Course: MRIT 201 and MRIT 220 and MRIT 261

MRIT 232 MR Procedures and Pathophys II Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261
- Placement Score: None
- Corequisite Course: MRIT 222 and MRIT 240 and MRIT 262

MRIT 240 MRI Image Analysis Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261
- Placement Score: None
- Corequisite Course: MRIT 222 and MRIT 232 and MRIT 262

2023-2024 Course Descriptions

MRIT 260 MRI Pre-Clinical Preparation Credit Hours: 3 / Billing Hours: 0

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 Course: None. Admission to the EPiC Magnetic Resonance Imaging Program is required.
- Placement Score: None
- Corequisite Course: MRIT 200 and MRIT 229

MRIT 261 Clinical Practice I Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 200 and MRIT 229 and MRIT 260
- Placement Score: None
- Corequisite Course: MRIT 201 and MRIT 220 and MRIT 230

MRIT 262 Clinical Practice II Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 201 and MRIT 220 and MRIT 230 and MRIT 261
- Placement Score: None
- Corequisite Course: MRIT 222 and MRIT 232 and MRIT 240

2023-2024 Course Descriptions

MRIT 263 Clinical Practice III

Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 222 and MRIT 232 and MRIT 240 and MRIT 262
- Placement Score: None
- Corequisite Course: MRIT 295

MRIT 295 MRI Certification Exam Prep

Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in MRIT 222 and MRIT 232 and MRIT 240 and MRIT 262
- Placement Score: None
- Corequisite Course: MRIT 263

2023-2024 Course Descriptions

MSGE 110 Massage for Beginners

Credit Hours: 0.53 / Billing Hours: 1

This course provides instruction in basic relaxation 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 relaxation 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 at the [LCC Marketplace](#) webpage.
 - For questions please call Medical Locked Storage at 517-483-9741.
 - If you are pregnant in your 2nd or 3rd trimester, or are 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.

2023-2024 Course Descriptions

MSGE 131 Massage I

Credit Hours: 2.13 / Billing Hours: 4

This course provides foundational 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, clinical charting, thermo- and cryotherapy, body mechanics, and self-care. (F,Sp)

- Prerequisite Course: None. HS Diploma or Equivalent and Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: The 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 2023 through Summer 2024.
 - Students enrolling in the Evening Cohort will complete the program in four consecutive semesters, Spring 2024 through Spring 2025.
 - To enroll, students must be 18 years of age or older by the start of classes and must declare Massage Therapy as their major.
 - Students wishing to enroll must attend a mandatory one-hour program orientation and submit a program approval application with required supporting documentation at least two weeks prior to the start of the semester.
 - Orientation dates and the program approval application can be found on the [“Steps to Apply” webpage](https://www.lcc.edu/academics/areas-of-study/health-public-service/massage/steps-to-apply.html) (<https://www.lcc.edu/academics/areas-of-study/health-public-service/massage/steps-to-apply.html>).
 - Seats are limited and are awarded on a first come, first served basis.
 - Contact Jodi or Crystal at 517-483-1410 for more information.

MSGE 132 Anatomy/Physiology Massage

Credit Hours: 3.2 / Billing Hours: 6

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 Massage Program to prepare for licensing exams and professional practice.

- Prerequisite Course: None. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

1229

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MSGE 132A Anatomy/Physiology Massage I

Credit Hours: 2.13 / Billing Hours: 4

An introductory course in human anatomy and physiology that combines lecture and integrated assignments 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 Massage Therapy Program to prepare for professional practice and licensing exams. (F,Sp)

- Prerequisite Course: None. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 132B Anatomy/Physiology Massage II

Credit Hours: 1.06 / Billing Hours: 2

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 Massage Program to prepare for licensing exams and professional practice. (F,Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 137 Medical Terminology in Massage

Credit Hours: 1.06 / Billing Hours: 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,Sp)

- Prerequisite Course: None. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

1230

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MSGE 139 Pathology for Massage

Credit Hours: 1.06 / Billing Hours: 2

This course will introduce students to the pathology of body systems and will address the positive or negative impact that massage may have on those conditions. Students will learn to apply this knowledge to decision-making skills for client care.

Prerequisite Course: None. Program Approval is required. Placement Scores: Reading Level 5 and Writing Level 6

- Prerequisite Course: None. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 139A Pathology for Massage I

Credit Hours: 0.53 / Billing Hours: 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 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 Score: Reading Level 5 and Writing Level 6

MSGE 139B Pathology for Massage II

Credit Hours: 0.53 / Billing Hours: 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 may have on those conditions. Students will learn to apply this knowledge to decision-making skills for client care. (F,Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

1231

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MSGE 141 Massage Clinic I

Credit Hours: 1.33 / Billing Hours: 2.5

Students will progressively utilize the knowledge, skills, and practical experience attained throughout the 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. (F,Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 150 Masg Special Topics

Credit Hours: .13 to 4.26 / Billing Hours: .25 to 7

This course offers students the opportunity to learn new skills and knowledge related to massage. Specific up-to-date course content will vary with each offering and will be related to massage. (As Needed)

- Prerequisite Course: Determined by Section
- Placement Score: Determined by Section

MSGE 151 Applied Massage Techniques

Credit Hours: 2.93 / Billing Hours: 5.5

This course will introduce the student to various massage techniques and how these techniques relate to individuals with specific needs. The focus will be on designing and implementing appropriate massage techniques for chair massage, infants, pregnant women, athletes, chronic and terminally ill individuals, the elderly, and clients with psychological issues.

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

1232

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

MSGE 151A Research Literacy

Credit Hours: 0.8 / Billing Hours: 1.5

Students will discover the value of clinical research to the massage therapy profession by learning to identify sources of research literature in the massage therapy field, interpreting those findings, and applying the evidence to treatment planning. They will also learn how to become involved in current research. (F)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 151B Event Massage

Credit Hours: 0.8 / Billing Hours: 1.5

This course prepares the student to perform corporate-venue office massage and massage prior to and following an athletic event or training session. Techniques cover table, on-site chair, and tabletop chair equipment options. Thermal injuries, the use of ice and heat to supplement the healing effects of massage, cross-fiber friction techniques, and indications, contraindications and procedures of event massage are also covered. (F)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 151C Maternal/Infant Massage

Credit Hours: 0.53 / Billing Hours: 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. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

1233

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MSGE 151D Special Populations

Credit Hours: 0.8 / Billing Hours: 1.5

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 target populations. (Su)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 170 Massage Directed/Indep Study Credit Hours: .13 to 4.26 / Billing Hours: .25 to 7

This course includes special research, projects, or directed study in 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 Score: Determined by Section

MSGE 231 Massage II

Credit Hours: 2.13 / Billing Hours: 4

This course will introduce the student to clinical massage techniques. Students will learn anatomy, physiology, and kinesiology of specific muscles of the superficial front line, superficial back line, and lateral line followed by clinical massage techniques and stretches to treat these areas. (F,Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program approval required.
- Placement Score: Reading Level 5 and Writing Level 6

1234

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MSGE 232 Massage III

Credit Hours: 2.13 / Billing Hours: 4

This course will continue to introduce the student to clinical massage techniques. Students will learn anatomy, physiology and kinesiology of specific muscles of the spiral line, arm line, and deep front line followed by clinical massage techniques and stretches to treat these areas. (Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 235 Licensing Exam Prep

Credit Hours: 0.53 / Billing Hours: 1

This course is designed to prepare massage students or practicing massage therapists to study for national massage exams. It will review all areas of the licensing exams content and cover test taking strategies. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required. Basic Life Support (BLS) certification from American Heart Association or American Red Cross valid through the end of the class or Passing grade in NCHE 102 or NCHE 103 within 2 years.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 241 Massage Clinic II

Credit Hours: 1.33 / Billing Hours: 2.5

Students will progressively utilize the knowledge, skills, and practical experience attained throughout the 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. (Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

1235

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MSGE 242 **Massage Clinic III**

Credit Hours: 1.6 / Billing Hours: 3

Students will progressively utilize the knowledge, skills, and practical experience attained throughout the 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. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 252 **Energy-Based Modalities**

Credit Hours: 1.06 / Billing Hours: 2

This course presents a survey of various energy modalities used in the bodywork profession. Students will learn both theories and techniques of these approaches. Modalities include reflexology, Asian body therapy, and polarity therapy. Students will also have the opportunity to investigate other modalities according to their interests. (Su)

- Prerequisite Course: Minimum 2.5 in all previous MSGE courses. Program approval required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 253 **Spa and Clinic Modalities**

Credit Hours: 1.06 / Billing Hours: 2

This course presents a survey of various spa modalities and modalities used in medical settings. Students will learn theories and techniques of these approaches. Modalities include thermotherapy, cryotherapy, cupping, aromatherapy, hot stones, brushing, Positional Release, and instrument use. Students will also have the opportunity to investigate other modalities. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in all previous MSGE courses. Program approval required.
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

MSGE 254 Busn App for Massage

Credit Hours: 1.06 / Billing Hours: 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. (Sp,Su)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 256 Clinical Assess for Massage

Credit Hours: 1.06 / Billing Hours: 2

This course introduces the student to a systematic method of deciding which specific massage techniques to apply and when to apply them. Students use newly acquired assessment skills to gather data to deal effectively with common musculoskeletal complaints, and then apply critical thinking skills to formulate a treatment plan that best addresses the issues identified. (F,Sp)

- Prerequisite Course: Minimum 2.5 in all previous required MSGE courses. Program Approval is required.
- Placement Score: Reading Level 5 and Writing Level 6

MSGE 258 Career Longevity

Credit Hours: 1.06 / Billing Hours: 2

The concepts taught in this Massage Therapy Program class teach students how to mentally and physically care for themselves in order to sustain a career as a massage therapist. Emphasis is placed on the impact of health, wellness and fitness for career longevity. General wellness principles and specific massage-related applications are also addressed. (F,Sp)

- Prerequisite Course: None. Program approval required.
- Placement Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

MUSC 101 Vocal Jazz & Pop Ensemble

Credit Hours: 1 / Billing Hours: 3

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)

- Prerequisite Course: None
- Placement Score: None
- Recommended: Music reading skills
- Course Note:
 - A non-credit option is available for this class at a reduced rate.
 - See the NCCE 200 listing in the Community and Continuing Education section of the College Catalog for more information.

MUSC 106 Private Music Lesson

Credit Hours: 2 / Billing Hours: 2

Concentrated one-to-one training in vocal/instrumental skills, techniques and repertory. (F,Sp,Su)

- Prerequisite Course: None. Department Approval Required
- Placement Score: None
- Corequisite Course: MUSC 121 or MUSC 122 or MUSC 123 or MUSC 124

MUSC 108 Concert Choir

Credit Hours: 1 / Billing Hours: 3

A larger student and community member mixed voice choir exploring diverse styles, genres, repertoires 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 Course: None
- Placement Score: None
- Recommended: Music reading skills
- Course Note:
 - A non-credit option is available for this class at a reduced rate.
 - See the NCCE 200 listing in the Community and Continuing Education section of the College Catalog for more information.

2023-2024 Course Descriptions

MUSC 109 Studio Class

Credit Hours: 1 / Billing Hours: 1

Studio Class will include discussion of practice routines and habits, technical and stylistic problems, performance anxiety, and repertoire memorization, as well as in class performances by the students. Students enrolled in MUSC 157, 158, 257, or 258 must enroll in MUSC 109. (F,Sp)

- Prerequisite Course: None
- Placement Score: None
- Corequisite Course: MUSC 157 or MUSC 158 or MUSC 257 or MUSC 258

MUSC 119 Lansing Concert Band

Credit Hours: 1 / Billing Hours: 3

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 Course: Department Approval by Audition and Music reading skills

MUSC 121 Percussion Ensemble

Credit Hours: 1 / Billing Hours: 3

The Percussion Ensemble rehearses and performs works of various styles, genres, cultural traditions and repertoires. 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 Course: None
- Recommended: Music reading skills

2023-2024 Course Descriptions

MUSC 122 Rock Band

Credit Hours: 1 / Billing Hours: 3

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 Course: None
- Placement Score: None
- Recommended: Music reading skills
- Course Note:
 - A non-credit option is available for this class at a reduced rate.
 - See the NCCE 200 listing in the Community and Continuing Education section of the College Catalog for more information.

MUSC 123 Jazz Ensemble

Credit Hours: 1 / Billing Hours: 3

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 Course: None. Department Approval by Audition
- Placement Score: None
- Recommended: Music reading skills
- Course Note:
 - A non-credit option is available for this class at a reduced rate.
 - See the NCCE 200 listing in the Community and Continuing Education section of the College Catalog for more information.

2023-2024 Course Descriptions

MUSC 124 Multi-Instrumental Music Ensem Credit Hours: 1 / Billing Hours: 3

This course is dedicated to the exploration of new sound combinations of a variety of instrumentations. This ensemble welcomes players of all instrument types. Compositional, improvisational, and interpretative skills are developed through ensemble, small group, and solo performances. (F,Sp)

- Prerequisite Course: None
- Placement Score: None
- Recommended: Music reading skills
- Course Note:
 - A non-credit option is available for this class at a reduced rate.
 - See the NCCE 200 listing in the Community and Continuing Education section of the College Catalog for more information.

MUSC 138 Keyboard Harmony I Credit Hours: 2 / Billing Hours: 3

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: Minimum 2.0 in MUSC 168 or passing score on the Music Theory Placement Test
- Placement Score: None

MUSC 143 Beginning Piano I - Summer Credit Hours: 1 / Billing Hours: 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: None
- Placement Score: None
- Recommended: Music reading skills

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MUSC 144 Beginning Piano I

Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: None
- Recommended: Music reading skills

MUSC 145 Beginning Piano II

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in MUSC 144
- Placement Score: None

MUSC 155 Class Voice Commercial I

Credit Hours: 2 / Billing Hours: 3

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)

- Prerequisite Course: None
- Placement Score: None

MUSC 156 Class Voice Commercial II

Credit Hours: 2 / Billing Hours: 3

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)

- Prerequisite Course: Minimum 2.0 in MUSC 155
- Placement Score: None

2023-2024 Course Descriptions

MUSC 157 Applied Lesson I

Credit Hours: 2 / Billing Hours: 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 Course: None. Music Major Audition Required
- Placement Score: None
- Corequisite Course: MUSC 109

MUSC 158 Applied Lesson II

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in MUSC 157 or Music Major Audition
- Placement Score: None
- Corequisite Course: MUSC 109

MUSC 163 Aural Skills I

Credit Hours: 1 / Billing Hours: 2

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. (Sp)

- Prerequisite Course: Minimum 2.0 in MUSC 168 or passing score on the Music Theory Placement Test
- Placement Score: None

2023-2024 Course Descriptions

MUSC 164 Aural Skills II

Credit Hours: 1 / Billing Hours: 2

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. (F)

- Prerequisite Course: Minimum 2.0 in MUSC 163
- Placement Score: None
- Corequisite Course: MUSC 194

MUSC 168 Rudiments of Music

Credit Hours: 3 / Billing Hours: 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,Sp)

- Prerequisite Course: None
- Placement Score: None

MUSC 188 Class Guitar

Credit Hours: 2 / Billing Hours: 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 Course: None

2023-2024 Course Descriptions

MUSC 193 Music Theory I

Credit Hours: 4 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: Minimum 2.0 in MUSC 168 or passing score on the Music Theory Placement Exam
- Placement Score: Reading Level 5 or ENGL 099 concurrently
- Corequisite Course: MUSC 163

MUSC 194 Music Theory II

Credit Hours: 4 / Billing Hours: 4

Third semester 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. (F)

- Prerequisite Course: Minimum 2.0 in MUSC 193
- Placement Score: Reading Level 5 or ENGL 099 concurrently
- Corequisite Course: MUSC 164

MUSC 197 Music Tech 1 Home Studio Prod

Credit Hours: 2 / Billing Hours: 3

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 Score: None
- Recommended: Familiarity with computers; music reading skills and familiarity with music keyboard

2023-2024 Course Descriptions

MUSC 199 Music Appreciation

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

MUSC 237 Musical Theater Performance

Credit Hours: 2 / Billing Hours: 3

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. (F)

- Prerequisite Course: None
- Placement Score: None
- Recommended: Music Reading Skills
- Course Note:
 - A non-credit option is available for this class at a reduced rate.
 - See the NCCE 200 listing in the Community and Continuing Education section of the College Catalog for more information.

MUSC 240 Musical Cultures to 1750

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: (Reading Level 5 and Writing Level 4) or ENGL 099 concurrently

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MUSC 241 Musical Cultures 1750-Present Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 4 or ENGL 099 concurrently

MUSC 246 Appreciation of Jazz Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

MUSC 247 History and Culture of Rock Credit Hours: 2 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

2023-2024 Course Descriptions

MUSC 255 Music Business & Management

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 4 and Writing Level 4

MUSC 257 Applied Lesson III

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in MUSC 158 or Music Major Audition
- Placement Score: None
- Corequisite Course: MUSC 109

MUSC 258 Applied Lesson IV

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in MUSC 257 or Music Major Audition
- Placement Score: None
- Corequisite Course: MUSC 109

MUSC 270 Rock Guitar

Credit Hours: 2 / Billing Hours: 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 Course: None

1248

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

MUSC 280 Private Composition

Credit Hours: 1 / Billing Hours: 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 Course: None. Department Approval Required
- Placement Score: None

MUSC 292 Arranging & Songwriting

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MUSC 193 or passing score on the Music Theory Placement Test
- Placement Score: Reading Level 5

MUSC 296 Music Internship

Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval Required
- Placement Score: None

MUSC 298 Music Tech 2 Advanced Studio

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in MUSC 197
- Placement Score: None
- Recommended: Computer experience; Music reading skills.

2023-2024 Course Descriptions

NCAS 102 Noncredit Academic Supprt-ENGL Credit Hours: 0 / Billing Hours: 0

NCAS 102 is a 2-hour per week, pass/fail lab open to students placing just below college-level in writing. Students co-enroll in the lab and a paired section of ENGL 121. The lab follows the curriculum of the composition class and focuses on building skills in critical reading (text and visual information); writing/research strategies and processes; vocabulary expansion; and textbook navigation. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: ENGL 121

NCAS 103 Noncredit Academic Supprt-SOCL Credit Hours: 0 / Billing Hours: 0

NCAS 103 is a 2-hour per week, pass/fail lab open to students enrolled in ENGL098. Students co-enroll in the lab and a paired section of SOCL 120 (Introduction to Sociology). The lab follows the curriculum of the sociology class and focuses on applying skills in critical reading (text and visual information); writing/research strategies and processes; vocabulary expansion; and textbook navigation to the Introduction to Sociology course work. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None
- Corequisite Course: ENGL 098 and SOCL 120

NCAS 104 Noncredit Academic Supprt-PSYC Credit Hours: 0 / Billing Hours: 0

NCAS 104 is a 2-hour per week, pass/fail lab open to students enrolled in ENGL098. Students co-enroll in the lab and a paired section of PSYC 200 (Introduction to Psychology). The lab follows the curriculum of the psychology class and focuses on applying skills in critical reading (text and visual information); writing/research strategies and processes; vocabulary expansion; and textbook navigation to the Introduction to Psychology course work. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None
- Corequisite Course: ENGL 098 and PSYC 200

1250

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

NCAS 105 Noncredit Academic Supprt-BUSN Credit Hours: 0 / Billing Hours: 0

NCAS 105 is a 2-hour per week, pass/fail lab open to students enrolled in ENGL098. Students co-enroll in the lab and a paired section of BUSN 118 (Introduction to Business). The lab follows the curriculum of the business class and focuses on applying skills in critical reading (text and visual information); writing/research strategies and processes; vocabulary expansion; and textbook navigation to the Introduction to Business course work. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None
- Corequisite Course: ENGL 098 and BUSN 118

NCBD 050 Building/Design Special Topics Credit Hours: 0 / Billing Hours: 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)

- Prerequisite Course: None

NCCE 200 Creative Arts Credit Hours: 0 / Billing Hours: 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)

- Prerequisite Course: None

NCCE 700 Health and Wellness Seminars Credit Hours: 0 / Billing Hours: 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 Course: None

2023-2024 Course Descriptions

NCCT 600 Noncredit Public Safety Svcs Credit Hours: 0 / Billing Hours: 0

Training in this series will focus on topics within public safety services. (F,Sp,Su)

- Prerequisite Course: None

NCCT 800 Noncredit Career Preparation Credit Hours: 0 / Billing Hours: 0

Training in this series will focus on topics towards career preparation. (F,Sp,Su)

- Prerequisite Course: None

NCEL 030 Low Intermediate Accelerated Credit Hours: 0 / Billing Hours: 0

This 6-week non-credit course is the Low Intermediate ESOL reading, speaking, writing, and listening course for English as a Second Language learners. This course is an accelerated course, utilizing lectures and online instruction. 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. In addition to class time, students are expected to spend 4-6 hours/week on course work.

- Placement Score: ESL Test AVERAGE 89-99 (ESOL 3; no score below 84) and Listening >50 (ESLL 1)
- Course Note:
 - For any questions, please contact the Job Training Center at 517-483-1857.
 - Cost of this class is \$50.

2023-2024 Course Descriptions

NCEL 033 Multi-Skills III

Credit Hours: 0 / Billing Hours: 0

This 6-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 030.

- Placement Score: ESL Test AVERAGE 89-99 (ESOL 3; no score below 84), and Listening >50 (ESLL 1)
- Course Note:
 - For any questions, please contact the Job Training Center at 517-483-1857.
 - Cost of this class is \$50.

NCEL 160 Health Careers for ESOL

Credit Hours: 0 / Billing Hours: 0

This 8-week non-credit course is focuses on vocabulary specifically used in health-related situations. The vocabulary is essential for students planning to work in a field related to health care. The course also explores various careers in the health field, with an emphasis on short-term certificate programs that lead to employment in one-to-two semesters. This course is an accelerated course, using lecture and online instruction. Students will be able to expand their vocabulary building skills and improve their reading strategies, reading and listening comprehension, speaking skills, and writing skills. Audio equipment and computers are available to aid students in building fluency. Students are expected to work 4-6 hours/week in addition to class time.

- Prerequisite Course: Minimum 2.5 in ESOL 090 and ESOL 095 or score of P in NCEL 030 and NCEL 033
- Placement Score: Writing Level 2 from NexGen WRITE Placer test or Placement Score of Reading Level 2 and Writing Level 2 from NexGen READ and WRITE Placer tests or NCEL 033 or ESOL 098 or ESOL 099 concurrently
- Course Note:
 - For any questions, please contact the Job Training Center at 517-483-1857.
 - Cost of this class is \$425.

1253

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

NCH E227 Health Special Topics

Credit Hours: 0 / Billing Hours: 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 Course: Determined by Section

NCHE 102 AHA BLS Provider CPR

Credit Hours: 0 / Billing Hours: 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 Course: None
- Placement Score: None
- Course Note:
 - Cost of this seminar is \$95.00.
 - If you have any questions, call Continuing Education at (517) 483-1415.

NCLD 210 Leadership Practicum I

Credit Hours: 0 / Billing Hours: 0

This non-credit course provides an opportunity for Student Leadership Academy members to apply leadership skills in on-campus and community service settings. The practicum includes a minimum of 30 hours of volunteer service with a community agency of the student's choice, serving on college committees, and participation in other assigned Student Leadership Academy events and activities. Students will develop practical skills in servant leadership and evaluate their experiences as they relate to academic, professional, and personal goals. (F)

- Prerequisite Course: Minimum 2.0 in (LEAD 110 and LEAD 111)
- Placement Score: None

2023-2024 Course Descriptions

NCLD 211 Leadership Practicum II

Credit Hours: 0 / Billing Hours: 0

This non-credit course provides an opportunity for Student Leadership Academy members to apply leadership skills in on-campus and community service settings. The practicum includes a minimum of 30 hours of volunteer service with a community agency of the student's choice, serving on college committees, and participation in other assigned Student Leadership Academy events and activities. Students will develop practical skills in servant leadership and evaluate their experiences as they relate to academic, professional, and personal goals. (Sp)

- Prerequisite Course: P (Pass) in NCLD 210
- Placement Score: None

NCMA 101 Math Refresher

Credit Hours: 0 / Billing Hours: 0

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. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None

NCRW 100 Foundations for Success

Credit Hours: 0 / Billing Hours: 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. (F,Sp,Su)

- Prerequisite Course: None. Department Approval Required
- Placement Score: Reading Level 1 and Writing Level 1

NCRW 101 Read/Write Refresh: Achieve360

Credit Hours: 0 / Billing Hours: 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 Course: None

1255

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

NDXT 100 Neuroanatomy and Physiology

Credit Hours: 3 / Billing Hours: 0

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. Admission to the Neurodiagnostic Technology Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: NDXT 101 and NDXT 102 and NDXT 120
- Course Note: \$150 of the course fee is for supplies and is non-refundable.

NDXT 101 Neurodiagnostic Procedures

Credit Hours: 3 / Billing Hours: 0

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. Admission to the Neurodiagnostic Technology Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: NDXT 100 and NDXT 102 and NDXT 120
- Course Note: \$200 of the course fee is for supplies and is non-refundable.

NDXT 102 EEG Applications

Credit Hours: 3 / Billing Hours: 0

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. Admission to the Neurodiagnostic Technology Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: NDXT 100 and NDXT 101 and NDXT 120
- Course Note: \$150 of the course fee is for supplies and is non-refundable.

1256

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

NDXT 120 EEG Pre-Clinical Preparation

Credit Hours: 3 / Billing Hours: 0

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. Admission to the Neurodiagnostic Technology Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: NDXT 100 and NDXT 101 and NDXT 102
- Course Note: \$200 of the course fee is for supplies and is non-refundable.

NDXT 130 Principles of EEG

Credit Hours: 2 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 100 and NDXT 101 and NDXT 102 and NDXT 120
- Placement Score: None
- Corequisite Course: NDXT 131 and NDXT 132 and NDXT 220
- Course Note: \$100 of the course fee is for supplies and is non-refundable.

NDXT 131 Electricity Principles/Safety

Credit Hours: 1 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 100 and NDXT 101 and NDXT 102 and NDXT 120
- Placement Score: None
- Corequisite Course: NDXT 130 and NDXT 132 and NDXT 220
- Course Note: \$50 of the course fee is for supplies and is non-refundable.

1257

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

NDXT 132 EEG Instrumentation I

Credit Hours: 2 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 100 and NDXT 101 and NDXT 102 and NDXT 120
- Placement Score: None
- Corequisite Course: NDXT 130 and NDXT 131 and NDXT 220
- Course Note: \$100 of the course fee is for supplies and is non-refundable.

NDXT 200 EEG Procedures & Pathology I

Credit Hours: 1 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 130 and NDXT 131 and NDXT 132
- Placement Score: None
- Corequisite Course: NDXT 201 and NDXT 202
- Course Note: \$50 of the course fee is for supplies and is non-refundable.

NDXT 201 EEG Instrumentation II

Credit Hours: 2 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 130 and NDXT 131 and NDXT 132
- Placement Score: None
- Corequisite Course: NDXT 200 and NDXT 202
- Course Note: \$100 of the course fee is for supplies and is non-refundable.

2023-2024 Course Descriptions

NDXT 202 EEG Quality Control

Credit Hours: 1 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 130 and NDXT 131 and NDXT 132
- Placement Score: None
- Corequisite Course: NDXT 200 and NDXT 201
- Course Note: \$50 of the course fee is for supplies and is non-refundable.

NDXT 220 EEG Clinical Practice I

Credit Hours: 3 / Billing Hours: 0

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 Course: Minimum 2.5 in NDXT 200 and NDXT 201 and NDXT 202
- Placement Score: None
- Corequisite Course: NDXT 130 and NDXT 200
- Course Note: \$250 of the course fee is for supplies and is non-refundable.

NDXT 221 EEG Clinical Practice II

Credit Hours: 3 / Billing Hours: 0

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
- Corequisite Course: NDXT 230 and NDXT 231 and NDXT 232
- Course Note: \$150 of the course fee is for supplies and is non-refundable.

2023-2024 Course Descriptions

NDXT 230 EEG Procedures & Pathology II Credit Hours: 1 / Billing Hours: 0

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
- Corequisite Course: NDXT 221 and NDXT 231
- Course Note: \$50 of the course fee is for supplies and is non-refundable.

NDXT 231 EEG Procedures & Pathology III Credit Hours: 1 / Billing Hours: 0

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
- Corequisite Course: NDXT 221 and NDXT 230
- Course Note: \$50 of the course fee is for supplies and is non-refundable.

NDXT 232 EEG Procedures & Pathology IV Credit Hours: 1 / Billing Hours: 0

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. (Su)

- Prerequisite Course: Minimum 2.5 in NDXT 231
- Placement Score: None
- Corequisite Course: NDXT 221
- Course Note: \$50 of the course fee is for supplies and is non-refundable.

2023-2024 Course Descriptions

NURS 101 Nursing Directed Study Credit Hours: .25 to 3 / Billing Hours: .25 to 6

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

NURS 102 Nursing Directed Study Credit Hours: .25 to 3 / Billing Hours: .25 to 6

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

NURS 118 Special Topics in Nursing Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

NURS 119 Special Topics in Nursing Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

1261

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

NURS 200 Nursing Pharmacology

Credit Hours: 3 / Billing Hours: 3.5

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 Course: 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

NURS 201 Patient-Centered Care

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 5
- Course Note: This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

NURS 210 Transition to Prof Nursing

Credit Hours: 6 / Billing Hours: 10.5

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 Score: Reading Level 5 and Writing Level 6
- Corequisite Course: NURS 212
- Course Note: \$980 of the course fee is for a medical kit and is non-refundable.

2023-2024 Course Descriptions

NURS 222 Childbearing Families

Credit Hours: 4 / Billing Hours: 5.5

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

NURS 231 Nursing Practice II

Credit Hours: 6 / Billing Hours: 10

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: \$347 of the course fee is for a medical kit and is non-refundable.

NURS 232 Children and Their Families

Credit Hours: 4 / Billing Hours: 5.5

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

2023-2024 Course Descriptions

NURS 241 Nursing Practice III

Credit Hours: 6 / Billing Hours: 11.75

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 Note: \$75 of the course fee is for a medical kit and is non-refundable.

NURS 242 Professional Practice

Credit Hours: 2 / Billing Hours: 2

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

PARA 200 Paramedic Directed Study

Credit Hours: 1 to 4 / Billing Hours: 1 to 7

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.
- Placement Score: Determined by section

2023-2024 Course Descriptions

PARA 221 Paramedic Medical Trauma I

Credit Hours: 4 / Billing Hours: 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,Sp)

- Prerequisite Course: Minimum 2.5 in BIOL 145 or (BIOL 201 and BIOL 202). Admission to Paramedic Program is required.
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4
- Corequisite Course: PARA 231 and PARA 241

PARA 221A Paramedic Medical Trauma IA

Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

PARA 221B Paramedic Medical Trauma IB

Credit Hours: 2 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 4

2023-2024 Course Descriptions

PARA 222 Paramedic Medical Trauma II

Credit Hours: 4 / Billing Hours: 4

PARA 222 incorporates previous knowledge gained at the basic EMT level and PARA 221. 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. (F,Sp)

- Prerequisite Course: Minimum 2.5 in PARA 221
- Placement Score: None
- Corequisite Course: PARA 232 and PARA 242

PARA 222A Paramedic Medical Trauma IIA

Credit Hours: 1 / Billing Hours: 1

The PARA 222 modules incorporate previous knowledge gained at the basic EMT level and PARA 221. 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

PARA 222B Paramedic Medical Trauma IIB

Credit Hours: 1 / Billing Hours: 1

The PARA 222 modules incorporate previous knowledge gained at the basic EMT level and PARA 221. 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

PARA 222C Paramedic Medical Trauma IIC

Credit Hours: 2 / Billing Hours: 2

The PARA 222 modules incorporate previous knowledge gained at the basic EMT level and PARA 221. 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

1267

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

PARA 231 Paramedic Cardiology I

Credit Hours: 2.5 / Billing Hours: 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,Sp)

- Prerequisite Course: None. Admission to Paramedic Program is required.
- Placement Score: None
- Corequisite Course: PARA 221 and PARA 241

PARA 231A Paramedic Cardiology IA

Credit Hours: 1 / Billing Hours: 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

PARA 231B Paramedic Cardiology IB

Credit Hours: 1.5 / Billing Hours: 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

PARA 232 Paramedic Cardiology II

Credit Hours: 2.5 / Billing Hours: 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. (F,Sp)

- Prerequisite Course: Minimum 2.5 in PARA 231
- Placement Score: None
- Corequisite Course: PARA 222 and PARA 242

1268

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PARA 232A Paramedic Cardiology IIA

Credit Hours: 1 / Billing Hours: 1

This module expands on information presented in PARA 231 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

PARA 232B Paramedic Cardiology IIB

Credit Hours: 1.5 / Billing Hours: 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

PARA 241 Paramedic Pharmacology I

Credit Hours: 2.5 / Billing Hours: 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,Sp)

- Prerequisite Course: None. Admission to Paramedic Program is required.
- Placement Score: None
- Corequisite Course: PARA 221 and PARA 231

2023-2024 Course Descriptions

PARA 241A Paramedic Pharmacology IA

Credit Hours: 1 / Billing Hours: 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

PARA 241B Paramedic Pharmacology IB

Credit Hours: 1.5 / Billing Hours: 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/pharmacodynamics 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

PARA 242 Paramedic Pharmacology II

Credit Hours: 2.5 / Billing Hours: 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. (F,Sp)

- Prerequisite Course: Minimum 2.5 in PARA 241
- Placement Score: None
- Corequisite Course: PARA 222 and PARA 232

2023-2024 Course Descriptions

PARA 242A Paramedic Pharmacology IIA

Credit Hours: 1 / Billing Hours: 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

PARA 242B Paramedic Pharmacology IIB

Credit Hours: 1.5 / Billing Hours: 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

PARA 251 Paramedic Skills I

Credit Hours: 2.5 / Billing Hours: 7.5

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,Su)

- Prerequisite Course: Minimum 2.5 in (PARA 221 and PARA 231 and PARA 241) or concurrently. Program approval is required.
- Placement Score: None
- Corequisite Course: PARA 261

2023-2024 Course Descriptions

PARA 251A Paramedic Skills IA

Credit Hours: 1 / Billing Hours: 3

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: None. Admission to the Military Medic to Paramedic Program is required.
- Placement Score: None

PARA 251B Paramedic Skills IB

Credit Hours: 1.5 / Billing Hours: 4.5

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 arrhythmias monitoring, and simulations. (F,Sp,Su)

- Prerequisite Course: None. Admission to the Military Medic to Paramedic Program is required.
- Placement Score: None

PARA 252 Paramedic Skills II

Credit Hours: 2.5 / Billing Hours: 7.5

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 2.5 in PARA 251
- Placement Score: None
- Corequisite Course: PARA 262

2023-2024 Course Descriptions

PARA 252A Paramedic Skills IIA

Credit Hours: 1 / Billing Hours: 3

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

PARA 252B Paramedic Skills IIB

Credit Hours: 1.5 / Billing Hours: 4.5

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

PARA 261 Paramedic Clinical I

Credit Hours: 3 / Billing Hours: 4

The first of two courses that provide clinical experience for paramedic students in hospital units such as the emergency department, critical care units, obstetrics, and pediatrics; and designated EMS agencies under the supervision of licensed paramedics and clinical faculty. (F,Su)

- Prerequisite Course: Minimum 2.5 in (PARA 221 and PARA 231 and PARA 241) or concurrently. Program approval is required.
- Placement Score: None
- Corequisite Course: PARA 251

2023-2024 Course Descriptions

PARA 262 Paramedic Clinical II

Credit Hours: 3 / Billing Hours: 4

The second of two courses that provide clinical experience for paramedic students in hospital units such as emergency department, critical care units, obstetrics, and pediatrics; and designated EMS agencies under the supervision of licensed paramedics and clinical faculty. (Sp)

- Prerequisite Course: Minimum 2.5 in PARA 261
- Placement Score: None
- Corequisite Course: PARA 252

PARA 262A Paramedic Clinical IIA

Credit Hours: 1 / Billing Hours: 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

PARA 262B Paramedic Clinical IIB

Credit Hours: 1 / Billing Hours: 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

PARA 262C Paramedic Clinical IIC

Credit Hours: 1 / Billing Hours: 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

2023-2024 Course Descriptions

PARA 263 Paramedic Internship

Credit Hours: 4 / Billing Hours: 4

This course provides a field internship with a paramedic-level EMS agency. Students are assigned to a paramedic preceptor to provide patient care and other professional duties with continuous evaluation of the student's progress. Oversight is provided by the program clinical coordinator and program director. Successful completion of all Paramedic program courses qualifies the student to take the National Registry of Emergency Medical Technicians (NREMT) certification exam, then apply for state licensure as a Paramedic upon passing exam. (Su)

- Prerequisite Course: Minimum 3.0 in PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 262
- Placement Score: None

PFFT 100 Total Fitness A-Fitness

Credit Hours: 2 / Billing Hours: 3

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:
 - This is an open workout class.
 - Students may attend at the downtown or west campus fitness center.
 - Cannot be taken during the same semester with PFFT 101, PFFT 102, or PFFT 109.
 - Course textbook "Anybody's Guide to Total Fitness" must be purchased prior to orientation.
 - ALL STUDENTS MUST COMPLETE a 50-minute ORIENTATION during the first week of the semester.
 - Log on to the [Fitness and Wellness](http://www.lcc.edu/pfw) webpage (<http://www.lcc.edu/pfw>) and select Facilities for a detailed orientation schedule.

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PFFT 101 Total Fitness B-Nutrition

Credit Hours: 2 / Billing Hours: 3

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. Healthy meal planning will be included. The course features flexibility of attendance. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None
- Course Note:
 - This is an open workout class.
 - Students may attend at the downtown or west campus fitness center.
 - Cannot be taken during the same semester with PFFT 100, PFFT 102, or PFFT 109.
 - ALL STUDENTS MUST COMPLETE a 50-minute ORIENTATION during the first week of the semester.
 - Course textbook "Anybody's Guide to Total Fitness" must be purchased prior to orientation.
 - Log on to the [Fitness and Wellness](http://www.lcc.edu/pfw) webpage (<http://www.lcc.edu/pfw>) and select Facilities for a detailed orientation schedule.

2023-2024 Course Descriptions

PFFT 102 Total Fitness C-Weight Control

Credit Hours: 2 / Billing Hours: 3

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 and will develop and participate in a personal exercise plan. The course features flexibility of attendance. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: None
- Course Note:
 - Students may attend at the downtown or west campus fitness center.
 - Cannot be taken during the same semester with PFFT 100, PFFT 101, or PFFT 109.
 - ALL STUDENTS MUST COMPLETE a 50-minute ORIENTATION during the first week of the semester.
 - Course textbook "Anybody's Guide to Total Fitness" must be purchased prior to orientation.
 - Log on to the [Fitness and Wellness](http://www.lcc.edu/pfw) webpage (<http://www.lcc.edu/pfw>) and select Facilities for a detailed orientation schedule.

1277

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

PFFT 109 Introduction to Fitness

Credit Hours: 1 / Billing Hours: 2

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:
 - This is an open workout class.
 - Students may attend at the downtown or west campus fitness center.
 - Cannot be taken during the same semester with PFFT 100, PFFT 101, or PFFT 102.
 - ALL STUDENTS MUST COMPLETE a 50-minute ORIENTATION during the first week of the semester.
 - Course textbook "Anybody's Guide to Total Fitness" must be purchased prior to orientation.
 - Log on to the [Fitness and Wellness](http://www.lcc.edu/pfw) webpage (<http://www.lcc.edu/pfw>) and select Facilities for a detailed orientation schedule.

PFFT 113 Core Strength & Flexibility Trng

Credit Hours: 1 / Billing Hours: 2

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

PFFT 114 Police Academy Fitness Trng

Credit Hours: 2 / Billing Hours: 3

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. (F,Sp)

- Prerequisite Course: None
- Placement Score: None

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F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

PFFT 119 **Fire Academy Fitness Training** **Credit Hours: 3 / Billing Hours: 4**

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
- Corequisite Course: FIRE 101 and FIRE 102

PFFT 170 **Yoga: Beginning** **Credit Hours: 1 / Billing Hours: 2**

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

PFFT 171 **Yoga: Continuing** **Credit Hours: 1 / Billing Hours: 2**

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

PFFT 181 **Lineworker Fitness A** **Credit Hours: 1 / Billing Hours: 2**

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 Score: Reading Level 3 and Writing Level 2

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PFFT 182 Lineworker Fitness B

Credit Hours: 1 / Billing Hours: 2

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 Score: Reading Level 3 and Writing Level 2

PFFT 183 Lineworker Fitness C

Credit Hours: 2 / Billing Hours: 4

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 Score: Reading Level 3 and Writing Level 2
- Recommended: Minimum 3.0 in PFFT 182

PFHW 120 Health and Wellness for Police

Credit Hours: 0.5 / Billing Hours: 0.5

This course introduces the student to health-related topics, including physical fitness, nutrition, stress management, and the prevention of lifestyle-related illness. (F,Sp)

- Prerequisite Course: None. Admission to the Mid-Michigan Police Academy is required.
- Placement Score: None

PFHW 123 Human Nutrition

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: BIOL 145 or equivalent

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PFHW 163 Healthy Lifestyles

Credit Hours: 2 / Billing Hours: 3

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 Score: Reading Level 5 and Writing Level 6

PFHW 181 Stress Management

Credit Hours: 1 / Billing Hours: 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 Score: Reading Level 4 and Writing Level 4

PFKN 106 Group Fitness Instructor Prep

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 5 and Writing Level 4

PFKN 170 Foundations of Kinesiology

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: BIOL 145 or equivalent

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PFKN 200 Exercise Physiology

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6 and Math Level 3

PFKN 201 Exercise Physiology Lab

Credit Hours: 1 / Billing Hours: 2

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 Course: Minimum 2.0 in [BIOL 145 or (BIOL 201 and BIOL 202) or concurrently] and (PFKN 200 or concurrently)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

PFKN 205 Sport & Exercise Psychology

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

PFKN 208 Biomechanics

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in BIOL 145 or (BIOL 201 and BIOL 202)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

1282

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PFKN 210 Athletic Training Principles

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 5 and Writing Level 6
- Recommended: BIOL 145 or equivalent

PFKN 250 Measurements in Kinesiology

Credit Hours: 3 / Billing Hours: 4

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 Score: Reading Level 5 and Writing Level 6 and Math Level 3
- Recommended: PFKN 170

PFKN 260 Growth and Motor Behavior

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: BIOL 145 or equivalent

2023-2024 Course Descriptions

PFKN 265 Exercise-Diverse Populations

Credit Hours: 3 / Billing Hours: 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,Sp)

- Prerequisite Course: Minimum 2.0 in BIOL 145 or (BIOL 201 and BIOL 202)
- Placement Score: Reading Level 5 and Writing Level 6

PFKN 270 Personal Trainer Preparation

Credit Hours: 4 / Billing Hours: 5

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)

- Prerequisite Course: Minimum 2.0 in BIOL 145 or (BIOL 201 and BIOL 202)
- Placement Score: 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

PFKN 280 Kinesiology Internship

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

PFKN 295 Ind Study in Physical Fitness Credit Hours: .5 to 4 / Billing Hours: .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

PFWT 112 Intro to Weight Training Credit Hours: 1 / Billing Hours: 2

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

PFWT 123 Weight Training I Credit Hours: 2 / Billing Hours: 3

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

2023-2024 Course Descriptions

PHIL 101 Introduction to Philosophy

Credit Hours: 3 / Billing Hours: 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 Score: (Reading Level 5 and Writing Level 6) or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

PHIL 151 Intro to Logic & Critical Think

Credit Hours: 4 / Billing Hours: 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

PHIL 152 Introduction to Ethics

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

2023-2024 Course Descriptions

PHIL 211 **Philosophy: Ancient & Medieval** **Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131

PHIL 212 **Philosophy: Modern & Contemporary** **Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6
- Recommended: ENGL 121 or ENGL 131

PHIL 215 **Philosophy of Religion** **Credit Hours: 3 / Billing Hours: 3**

This course presents an analysis of central themes in religion using applied philosophical methods. Students will engage religious topics to analyze philosophical concerns related to topics such as metaphysics, epistemology, critical thinking, and ethics. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

PHIL 265 **Ethical Issues in Medicine** **Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

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F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PHIL 295 **Ind Study in Philosophy** **Credit Hours: 1 to 4 / Billing Hours: 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 Course: None
- Placement Score: None; Department approval required

PHOT 101 **Basic Photo for Non-Majors** **Credit Hours: 2 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: None
- Course Note: A digital single lens reflex (DSLR) or mirrorless camera with manual mode is required.

2023-2024 Course Descriptions

PHOT 111 Digital Photography I

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: 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 capable of shooting raw format is required.
 - Adobe Lightroom software is used.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Lightroom Classic to complete their assignments.
 - Students have access to these in the Learning Commons Computer Lab located in the TLC building.
 - See official syllabus.

PHOT 112 Digital Imag for Photographers

Credit Hours: 4 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in PHOT 111 or concurrently
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3
- Course Note:
 - A manually-adjustable Digital SLR/or mirrorless camera is required.
 - Adobe Photoshop CC software is used.
 - Online, Hybrid, and ORT students are required to have semester-long access to Adobe Photoshop CC to complete their assignments.
 - Students have access to these in the Learning Commons Computer Lab located in the TLC building.
 - See official syllabus.

2023-2024 Course Descriptions

PHOT 113 Lighting Concepts and Applic

Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in PHOT 111 or concurrently
- Placement Score: 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.

PHOT 114 Advanced Photographic Imaging

Credit Hours: 4 / Billing Hours: 4

An advanced-level study in the capture, processing, and manipulation of digital photographic images using image editing software. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Learners will apply color management and color image design principles in the production of professional-level color photographic images. (Sp)

- Prerequisite Course: Minimum 2.0 in (PHOT 111 and PHOT 112 and PHOT 113)
- Placement Score: 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.

PHOT 117 Digital Photography II

Credit Hours: 4 / Billing Hours: 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 Course: Minimum 2.0 in (PHOT 111 and PHOT 112)
- Placement Score: 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.

2023-2024 Course Descriptions

PHOT 118 Visual Literacy

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in (ARTS 102 and PHOT 111 and PHOT 112 and PHOT 113)
- Placement Score: Reading Level 3 and Writing Level 6 and Math Level 3

PHOT 119 Intermediate Lighting

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in (PHOT 111 and PHOT 113)
- Placement Score: 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.

PHOT 120 Still/Motion Capture & Editing

Credit Hours: 3 / Billing Hours: 3

An introduction to the fundamentals of capturing, editing, and outputting video footage and still images for a variety of visual applications. Students will learn to light, capture, edit, manipulate, and export visual content in a variety of formats for print, web and soft display. (Sp)

- Prerequisite Course: Minimum 2.0 in ARTS 102
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: ARTS 171

2023-2024 Course Descriptions

PHOT 190 Film Capture/Hybrid Imaging Credit Hours: 3 / Billing Hours: 3

An introduction to the capture, processing, and printing of photographic images using silver halide color and black and white films. Medium and large format cameras will be utilized for producing film negatives. Students will learn to process film, scan negatives, produce silver-based traditional prints, and enhance hybrid images for output on black and white and color printing devices. (Sp)

- Prerequisite Course: Minimum 2.0 in PHOT 114 or Department Approval
- Placement Score: Reading Level 3 and Writing Level 2 and Math Level 3

PHOT 191 Photo Imaging Special Topics Credit Hours: 1 to 3 / Billing Hours: 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 Course: Determined by Section
- Placement Score: Determined by Section

PHOT 212 Advanced Still/Video Projects Credit Hours: 3 / Billing Hours: 3

Students will learn the technical requirements to produce professional photographic illustrations and will use appropriate tools and techniques to produce professional photographic illustrations and DSLR video footage. Students will be introduced to appropriate medium format technologies and video capture as applied to professional photographic illustration. (F)

- Prerequisite Course: Minimum 2.0 in PHOT 114 and PHOT 119
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3

2023-2024 Course Descriptions

PHOT 213 Portrait Photography

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in PHOT 114 and PHOT 119
- Placement Score: 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.

PHOT 214 Photojournalism

Credit Hours: 2 / Billing Hours: 2

This course introduces students to techniques and practices of photojournalism, documentary photography, public relations photography, and emerging media. (F)

- Prerequisite Course: Minimum 2.0 in PHOT 114 and PHOT 117 and PHOT 119 and minimum 2.0 in PHOT 215 or concurrently
- Placement Score: 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.

PHOT 215 Digital Color Management/Print

Credit Hours: 2 / Billing Hours: 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 Course: Minimum 2.0 in PHOT 114 and PHOT 117
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3

1293

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PHOT 232 Internship

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 3 and Writing Level 2 and Math Level 3

PHOT 270 Busn Issues for Photography

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (PHOT 113 and PHOT 114 and PHOT 117)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3

PHOT 280 Advanced Projects

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (PHOT 212 and PHOT 213 and PHOT 214 and PHOT 215) and (PHOT 290 concurrently)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3
- Course Note: A manually-adjustable Digital SLR camera is required. See official syllabus.

2023-2024 Course Descriptions

PHOT 290 Portfolio Assembly

Credit Hours: 2 / Billing Hours: 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 Course: 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)
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 3

PHYS 120 The Art of Physics

Credit Hours: 4 / Billing Hours: 5

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 interactive activities and laboratory exercises supplement the course materials and instruction. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in (MATH 105 or MATH 106) or Math Level indicated below
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

PHYS 200 Intro to Applied Physics

Credit Hours: 4 / Billing Hours: 5

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 109 or MATH 114) or Math Level indicated below
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 4

1295

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

PHYS 221 Introductory Physics I

Credit Hours: 4 / Billing Hours: 6

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, and elasticity. Experiments and hands-on activities are integrated with lecture topics. (F,Sp,Su)

- Prerequisite Course: Minimum 2.5 in MATH 120 or minimum 2.0 in (MATH 126 or MATH 141) or concurrently or Math Level 9 noted below
- Placement Score: Reading Level 5 and Writing Level 6 and Math Level 9
- Course Note: The PHYS 221/222 courses are often taken by students going into fields of study related to health, the life sciences, and architecture.

PHYS 222 Introductory Physics II

Credit Hours: 4 / Billing Hours: 6

Second semester continuation of algebra- and trigonometry-based physics with laboratory, designed to present the fundamental principles of physics, with applications. Topics include simple harmonic motion, waves, sound, light, wave and geometric optics, and electricity and magnetism, including circuits. Experiments and hands-on activities are integrated with the lecture topics. (F,Sp)

- Prerequisite Course: Minimum 2.0 in PHYS 221 or Department Approval
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: The PHYS 221/222 courses are often taken by students going into fields of study related to health, the life sciences, and architecture.

2023-2024 Course Descriptions

PHYS 251 Physics I with Calculus

Credit Hours: 5 / Billing Hours: 7

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 Score: Reading Level 5 and Writing Level 6
- Course Note: The PHYS 251/252 courses are often taken by students going into fields of engineering, physics, chemistry, and other fields requiring a Calculus-level understanding of physics.

PHYS 252 Physics II with Calculus

Credit Hours: 5 / Billing Hours: 7

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 Course: Minimum 2.0 in PHYS 251 and Minimum 2.0 in (MATH 152 or MATH 162)
- Placement Score: Reading Level 5 and Writing Level 6
- Course Note: The PHYS 251/252 courses are often taken by students going into fields of engineering, physics, chemistry, and other fields requiring a Calculus-level understanding of physics.

PHYS 260 Statics for Engineers

Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in PHYS 251
- Placement Score: None

1297

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

POLS 120 American Political System

Credit Hours: 4 / Billing Hours: 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: None
- Placement Score: Reading Level 5

POLS 121 State and Local Government

Credit Hours: 4 / Billing Hours: 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

POLS 201 Intro to Political Science

Credit Hours: 3 / Billing Hours: 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

POLS 205 Government Internship

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

1298

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

POLS 240 Introduction to Public Policy

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

POLS 250 Campaigns & Elections

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

POLS 260 Comparative Political Systems

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

POLS 270 International Relations

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

1299

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

POLS 295 Ind Study in Political Science Credit Hours: 1 to 4 / Billing Hours: 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 Course: None
- Placement Score: None; Department approval required

PSYC 175 Psyc of Death: Prep for Living Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

PSYC 180 Intro to Positive Psychology Credit Hours: 3 / Billing Hours: 3

A general overview of positive psychology and its place within psychology as a whole. Major topics are well-being, strengths and virtues, positive emotional and cognitive states, positive institutions, and the need for positivity with stigmatized groups. Attention will be paid to research underlying the formal study of these topics. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5

2023-2024 Course Descriptions

PSYC 200 Introduction to Psychology Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 or ENGL 099 concurrently
- Course Note:
 - All sections of PSYC 200 allow concurrent enrollment with ENGL 099.
 - Some face-to-face sections of PSYC 200 allow concurrent enrollment with ENGL 098 and NCAS 104.
 - See an academic advisor for sections that allow concurrent enrollment with ENGL 098 and NCAS 104.
 - Beginning Fall 2023, this course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for the final department assessment only. For more information, go to the [Online Course Testing webpage](#).

PSYC 202 Psychology of Personality Credit Hours: 3 / Billing Hours: 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)

PSYC 203 Social Psychology Credit Hours: 3 / Billing Hours: 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 Course: 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)

1301

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

PSYC 205 Human Growth and Development Credit Hours: 3 / Billing Hours: 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)

PSYC 209 Cognitive Psychology Credit Hours: 3 / Billing Hours: 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 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

PSYC 210 Brain and Behavior Credit Hours: 3 / Billing Hours: 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 Course: Minimum 2.0 in (PSYC 200 or BIOL 121 or BIOL 127)
- Placement Score: Reading Level 5
- Recommended: Writing Level 6 or (Minimum 2.0 in ENGL 121 or ENGL 131)

2023-2024 Course Descriptions

PSYC 221 Child Psychology

Credit Hours: 3 / Billing Hours: 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)

PSYC 222 Adolescent Psychology

Credit Hours: 3 / Billing Hours: 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 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)

PSYC 240 Psychology of Human Sexuality

Credit Hours: 3 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5

2023-2024 Course Descriptions

PSYC 250 Abnormal Psychology

Credit Hours: 3 / Billing Hours: 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)

RELG 150 Intro to World Religions

Credit Hours: 4 / Billing Hours: 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 the world's largest religions: Christianity, Islam, Hinduism, and Buddhism. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

RELG 210 Comparative Religions

Credit Hours: 3 / Billing Hours: 3

This course will introduce students to various topics and themes across major religions in order to analyze the nature of reality and determinations of truth, while cultivating a global perspective on the nature of religious belief, religious practice, and the religious experience of The Sacred. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

RELG 211 Asian Religions and Traditions

Credit Hours: 4 / Billing Hours: 4

This course offers an exploration of the historical development and contemporary practice of religions and philosophies of East and South Asia, including but not limited to: Hinduism, Buddhism, Islam, Confucianism, and Taoism. The course also considers the influences of these religions on contemporary culture in North America and globally. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

1304

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

RELG 212 **Judaism, Christianity & Islam**

Credit Hours: 4 / Billing Hours: 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 Course: None
- Placement Score: Reading Level 5 and Writing Level 6

RELG 230 **Introduction to Christianity**

Credit Hours: 3 / Billing Hours: 3

In this course, students will analyze the historical and cultural contexts of Jesus' teachings and the New Testament. The student will interpret scriptures and acknowledge the contributions of historical figures that shaped Christianity's beliefs and practices. Three expressions of Christianity will be studied: Catholicism, Orthodox, and Protestantism. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

RELG 232 **Introduction to Islam**

Credit Hours: 3 / Billing Hours: 3

This course will introduce students to the historical and cultural contexts for understanding the teachings of The Prophet Muhammad, the beliefs and practices derived from the Qur'an and Sunnah (Hadith), and early caliphates or dynasties. The student will be introduced to three expressions of Islam: Sunni, Shi'a, and Sufism. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6 or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) or (Reading Level 5 and Writing Level 4 and NCAS 102 concurrently)

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

RELG 242 New Testament Literature

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 and Writing Level 6

SCIN 287 Science Technology Internship

Credit Hours: 2 to 4 / Billing Hours: 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 Course: Department Approval

SCIS 297 Independent Study in Science

Credit Hours: 1 to 4 / Billing Hours: 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 Course: Department Approval

2023-2024 Course Descriptions

SIGN 160 **Intro to the Deaf Community**

Credit Hours: 3 / Billing Hours: 3

This course is designed to introduce the student to the various aspects of life in the dDeaf 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 General Education-Applied Degrees English Composition (second course)/Communication requirement. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Course Note:
 - May be taken concurrently with SIGN 161.
 - Non-degree students may waive SIGN 160.

SIGN 161 **American Sign Language I**

Credit Hours: 3 / Billing Hours: 3

This course is an introduction to the basic skills in developing production and comprehension skills in American Sign Language (ASL). Students will learn ASL vocabulary, structure, and grammar. Course content also includes the manual alphabet and numbers. Students will develop basic conversational abilities and culturally appropriate behaviors, and learn about the culture and history of dDeaf communities. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in SIGN 160 or concurrently
- Placement Score: Reading Level 5 and Writing Level 4
- Course Note: May be taken concurrently with SIGN 160.

SIGN 162 **American Sign Language II**

Credit Hours: 3 / Billing Hours: 3

This course is designed to continue student development, production, and comprehension skills in American Sign Language (ASL). Students will learn additional ASL vocabulary, structure, and grammar. Students will develop basic conversational abilities, culturally appropriate behaviors, and learn about the culture and history of dDeaf communities. (F,Sp)

- Prerequisite Course: Minimum 2.0 in SIGN 161
- Placement Score: Reading Level 5 and Writing Level 4

1307

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

SIGN 163 **American Sign Language III** **Credit Hours: 3 / Billing Hours: 3**

This course is an introduction to intermediate skills in developing production and comprehension skills in American Sign Language (ASL). Students will learn ASL vocabulary, structure, and grammar. Course content also includes the manual alphabet and numbers. Students will develop and refine their conversational abilities, culturally appropriate behaviors, and learn about the culture and history of dDeaf communities. (Sp,Su)

- Prerequisite Course: Minimum 2.0 in SIGN 162
- Placement Score: Reading Level 5 and Writing Level 4

SIGN 164 **American Sign Language IV** **Credit Hours: 3 / Billing Hours: 3**

This course is designed to continue development of American Sign Language (ASL) skills. Students will learn ASL vocabulary, structure, and grammar. Students will develop and refine intermediate conversational abilities, culturally appropriate behaviors, and learn about the culture and history of dDeaf communities. (F)

- Prerequisite Course: Minimum 2.0 in SIGN 163
- Placement Score: Reading Level 5 and Writing Level 4

SIGN 166 **Fingerspelling** **Credit Hours: 3 / Billing Hours: 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)

- Prerequisite Course: Minimum 2.0 in SIGN 161
- Placement Score: Reading Level 5 and Writing Level 4
- Recommended: SIGN 162 or concurrently

SIGN 167 **Beginning Sign to Voice** **Credit Hours: 3 / Billing Hours: 3**

Designed to increase the student's receptive skills in conversational sign language focusing on comprehension of the various manual communication systems utilized by dDeaf 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. (Sp,Su)

- Prerequisite Course: Minimum 2.0 in SIGN 163 or concurrently
- Placement Score: Reading Level 5 and Writing Level 4

1308

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

SIGN 170 **Expressive/Receptive ASL**

Credit Hours: 3 / Billing Hours: 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: Reading Level 5 and Writing Level 4

SIGN 200 **Sign Practicum Seminar**

Credit Hours: 2 / Billing Hours: 2

Prepares students to develop working relationships within the field of interpreting. This course will focus on ethics, professional behavior, and networking. This course will prepare students for directed observation and application of practical interpreting skills required in the consecutive semesters. Student must complete ninety (90) practicum hours during the semester. (F)

- Prerequisite Course: None; Department Approval required.
- Placement Score: Reading Level 5 and Writing Level 4
- Restrictions: Student must successfully pass ITP screening in order to take SIGN 200.

SIGN 240 **Intro to Transliterating**

Credit Hours: 3 / Billing Hours: 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. Student must complete ninety (90) practicum hours during the semester. (F)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must successfully pass ITP screening in order to take SIGN 240.

2023-2024 Course Descriptions

SIGN 250 Deaf Culture and History

Credit Hours: 3 / Billing Hours: 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. (F)

- Prerequisite Course: Minimum 2.0 in SIGN 163
- Placement Score: Reading Level 5 and Writing Level 4

SIGN 260 Linguistic Principles of ASL

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: Minimum 2.0 in SIGN 163
- Placement Score: Reading Level 5 and Writing Level 4

SIGN 263 Intermediate Sign to Voice

Credit Hours: 3 / Billing Hours: 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. Student must complete ninety (90) practicum hours during the semester. (Sp)

- Prerequisite Course: Minimum 2.5 in (SIGN 200 and SIGN 240)
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed ninety (90) practicum hours prior to taking SIGN 263.

2023-2024 Course Descriptions

SIGN 266 Post-Secondary Interpreting

Credit Hours: 2 / Billing Hours: 2

Designed for students intending to become sign language interpreters, this course provides simulated testing settings using live or pre-recorded movies of hearing and deaf instructors giving classroom-appropriate lectures. Students will develop teaming skills, feedback skills, and interpreting skills. Students will practice interpreting approaches and skills for a variety of academic topics. Students will analyze lectures at message level and begin to apply principles of discourse analysis. Student must complete sixty (60) practicum hours during the semester, for a minimum of 240 hours, while also satisfying the individual category requirements. (Su)

- Prerequisite Course: Minimum 2.5 in (SIGN 263 and SIGN 267)
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed one hundred eighty (180) practicum hours prior to taking SIGN 266.

SIGN 267 Sign Practicum I

Credit Hours: 3 / Billing Hours: 3

Combines student transliterated lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Designed for students intending to become sign language interpreters. Student must complete ninety (90) practicum hours during the semester. (Sp)

- Prerequisite Course: Minimum 2.5 in (SIGN 200 and SIGN 240)
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed ninety (90) practicum hours prior to taking SIGN 267.

2023-2024 Course Descriptions

SIGN 268 Sign Practicum II

Credit Hours: 3 / Billing Hours: 3

For students intending to become sign language interpreters, combines student-interpreted lectures and supervised placement in various settings to allow directed observation and application of practical interpreting skills. Student must complete sixty (60) practicum hours during the semester for a minimum of 240 hours, while also satisfying the individual category requirements. (Su)

- Prerequisite Course: Minimum 2.5 in (SIGN 263 and SIGN 267)
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed one hundred eighty (180) practicum hours prior to taking SIGN 268.

SIGN 270 Advanced Interpreting

Credit Hours: 3 / Billing Hours: 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. Student must complete eighty (80) practicum hours and satisfy the individual category requirements during the semester. (F)

- Prerequisite Course: Minimum 2.5 in (SIGN 266 and SIGN 268)
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed the sophomore year practicum requirement prior to taking SIGN 270.

SIGN 271 Advanced Sign to Voice

Credit Hours: 3 / Billing Hours: 3

This course provides advanced skill development and fluency in voicing for a variety of dDeaf individuals in diverse settings. Techniques taught are voice projection, breathing and relaxation, analysis of sign information, anticipation and prediction, closure, modality switching, correction, decalage, and pacing. Designed for students intending to become sign language interpreters. Student must complete eighty (80) practicum hours and satisfy the individual category requirements during the semester. (Sp)

- Prerequisite Course: Minimum 2.5 in SIGN 270
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed eighty (80) practicum hours prior to taking SIGN 271.

1312

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

SIGN 293 Principles of Interpreting

Credit Hours: 3 / Billing Hours: 3

Surveys professional interpreting through lecture, role-playing, and classroom discussion. Reinforces the ethics of interpreting while analyzing the specific roles and responsibilities of a professional interpreter. Examines necessary skills of the interpreter in various settings, such as educational, mental health, vocational rehabilitation, legal, religious, phone, television, medical, DeafBlind, and minimal language skills. Student must complete eighty (80) practicum hours during the semester. (F)

- Prerequisite Course: Minimum 2.5 in (SIGN 266 and SIGN 268)
- Placement Score: Reading Level 5 and Writing Level 4
- Restriction: Student must have completed the sophomore year practicum requirement prior to taking SIGN 293.

SIGN 295 Ind Study in Sign Language

Credit Hours: 1 to 4 / Billing Hours: 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: None. Department Approval is required.
- Placement Score: None

SIGN 296 Specialized Interpreting

Credit Hours: 2 / Billing Hours: 2

This course allows students to learn best practices for interpreting in a variety of settings. These settings may include community, religion, video relay, education, medical, and legal. Designed for students intending to become sign language interpreters. (Sp)

- Prerequisite Course: Minimum 2.5 in (SIGN 270 and SIGN 293)
- Placement Score: Reading Level 5 and Writing Level 4

2023-2024 Course Descriptions

SOCL 120 Introduction to Sociology

Credit Hours: 4 / Billing Hours: 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 Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)
- Course Note:
 - 1) All sections of SOCL 120 allow concurrent enrollment with ENGL 099; some sections also allow concurrent enrollment with ENGL 098 and NCAS 103. See an academic advisor for sections that allow concurrent enrollment with ENGL 098 and NCAS 103.
 - 2) The textbook for this course is an open educational resource, provided to students at no cost. Access to the textbook will be available on the first day of class.
 - 3) Online students are required to travel to LCC campus or request an approved non-LCC testing site to complete their SOCL 120 Departmental Final Exam.
 - 4) Online, Hybrid and ORT sections of this course require internet access to complete quizzes and/or other assessments.

SOCL 254 Marriage and Family

Credit Hours: 3 / Billing Hours: 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)

2023-2024 Course Descriptions

SOCL 255 Contemporary Social Problems Credit Hours: 3 / Billing Hours: 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)

SOCL 260 Race and Ethnicity Credit Hours: 3 / Billing Hours: 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)

SOCL 295 Independent Study in Sociology Credit Hours: 1 to 4 / Billing Hours: 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 Course: None
- Placement Score: None; Department approval required

2023-2024 Course Descriptions

SOWK 101 Introduction to Social Work

Credit Hours: 3 / Billing Hours: 3

This course introduces the principles of professional social work practice. Emphasis is on the history of social work, social welfare policy, empowerment, and human diversity. There is an overview of social work ethical practice, roles, and careers with relevance to the diverse social and client needs. This course complies with the Social Work Competencies, Council on Standards for Social Work Education. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6

SPAN 121 Elementary Spanish I

Credit Hours: 4 / Billing Hours: 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 is taught largely in Spanish. (F,Sp,Su)

- Prerequisite Course: None
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

SPAN 122 Elementary Spanish II

Credit Hours: 4 / Billing Hours: 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 is taught largely in Spanish. (F,Sp,Su)

- Prerequisite Course: Minimum 2.0 in SPAN 121 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

SPAN 201 Intermediate Spanish I

Credit Hours: 4 / Billing Hours: 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 is taught entirely in Spanish. (F,Sp)

- Prerequisite Course: Minimum 2.0 in SPAN 122 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

1316

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

SPAN 202 Intermediate Spanish II

Credit Hours: 4 / Billing Hours: 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 is taught entirely in Spanish. (Sp)

- Prerequisite Course: Minimum 2.0 in SPAN 201 or equivalent
- Placement Score: Reading Level 5 or (Reading Level 4 and ENGL 099 concurrently)

STAT 170 Introduction to Statistics

Credit Hours: 4 / Billing Hours: 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, 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 107) or (MATH 097 concurrently) or Math Level indicated below
- Placement Score: (Reading Level 5 and Writing Level 4) or (Reading Level 4 and Writing Level 4 and ENGL 099 concurrently) and Math Level 5
- Course Notes:
 - 1) Graphing calculator required; TI 83-84 series calculator highly recommended.
 - 2) A GED score of 165 or higher within 10 years also allows a student to take STAT 1703) A student should take either STAT 170 or STAT 215 (not both), depending on their transfer institution.
 - 3) This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

2023-2024 Course Descriptions

STAT 215 Intro to Probability and Stats

Credit Hours: 4 / Billing Hours: 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 noted below
- Placement Score: Reading Level 5 and Writing Level 4 and Math Level 7
- Recommended: Knowledge of Windows software
- Course Note:
 - 1) A graphing calculator from the TI-83/84 series is required for course work.
 - 2) A student should take either STAT 170 or STAT 215 (not both), depending on their transfer institution.
 - 3) This course is offered in an online format and requires students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, go to the [Online Course Testing webpage](#).

STPR 145 Foundations Sterile Processing

Credit Hours: 5 / Billing Hours: 6.5

This course introduces students to basic skills needed in the Sterile Processing Department of health care facilities, including processing patient care equipment, supplies, and instruments for use in all departments. Students will also learn the principles and practices of decontamination, cleaning, disinfection, sterilization, and distribution of medical/surgical supplies. (F,Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: STPR 148
- Course Note: Students will be charged an additional fee of \$50 for ACEMAPP required documentation. Required:
 - 1) Minimum age of 18 required to enroll in this course.
 - 2) Completion of Bloodborne Pathogens and HIPAA Training online; information provided at first class session.

1318

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

STPR 148 Sterile Processing Externship

Credit Hours: 2 / Billing Hours: 2

This course prepares individuals to function competently in the Sterile Processing Department in hospitals. It builds on the principles and practices taught in STPR 145 and includes 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 through the Certification Board for Sterile Processing and Distribution (CBSPD). (F,Sp)

- Prerequisite Course: Minimum 2.5 in [STPR 145 or (CHSE 120 and CHSE 145) or concurrently]
- Placement Score: Reading Level 5 and Writing Level 4
- Corequisite Course: STPR 145
- Course Note: Required:
 - 1) Minimum age of 18 required to enroll in this course.
 - 2) Completion of Bloodborne Pathogens and HIPAA Training online; information provided on course D2L site.
 - 3) Negative 2-step TB (tuberculosis) skin test within the last year.
 - 4) Student must pass an [ICHAT](#) criminal background check prior to clinical placement; information provided on course D2L site.

SURG 100 Fundamentals of Surgical Tech

Credit Hours: 3 / Billing Hours: 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
- Corequisite Course: SURG 101 and SURG 108 and SURG 109 and SURG 121 and SURG 122

2023-2024 Course Descriptions

SURG 101 The Surgical Patient

Credit Hours: 2 / Billing Hours: 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
- Corequisite Course: SURG 100 and SURG 108 and SURG 109 and SURG 121 and SURG 122

SURG 103 Surgical Asepsis

Credit Hours: 2 / Billing Hours: 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

SURG 106 Surgical Tech Directed Study

Credit Hours: 1 to 3 / Billing Hours: 1 to 6

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

1320

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

SURG 108 Surgical Pharmacology

Credit Hours: 2 / Billing Hours: 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
- Corequisite Course: SURG 100 and SURG 101 and SURG 109 and SURG 121 and SURG 122

SURG 109 Basic Surgical Procedures

Credit Hours: 2 / Billing Hours: 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
- Corequisite Course: SURG 100 and SURG 101 and SURG 108 and SURG 121 and SURG 122

SURG 110 Advanced Surgical Procedures

Credit Hours: 6 / Billing Hours: 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
- Corequisite Course: SURG 111 and SURG 123 and SURG 124

1321

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

SURG 111 Surgical Specialty/Prof Prep

Credit Hours: 3 / Billing Hours: 3

This course focuses on preparing the student for lifelong learning, and includes conversations relative to the clinical experience and tracking of required surgical cases. Clinical site evaluations, documentation, and competencies will be reviewed for satisfactory compliance. Emphasis will be placed on advanced technologies, the future of tele-surgery, the operating room ten years out, and advances in specialty surgeries. Preparation for the Certified Surgical Technologist (CST) national certification exam will be provided in a review of core components, surgical anatomy, and surgical procedures. (Sp)

- Prerequisite Course: None. Successful completion of 1st semester of the Surgical Technology Program is required.
- Placement Score: None
- Corequisite Course: SURG 110 and SURG 123 and SURG 124

SURG 121 Applied Surgical Techniques I

Credit Hours: 2 / Billing Hours: 4

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 SURG 122. (F)

- Prerequisite Course: None. Admission to Surgical Technology Program is required.
- Placement Score: None
- Corequisite Course: SURG 100 and SURG 101 and SURG 108 and SURG 109
- Course Note: \$484 of the course fee is for a medical kit and is non-refundable.

SURG 122 Applied Surgical Techniques II

Credit Hours: 2 / Billing Hours: 4

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
- Corequisite Course: SURG 100 and SURG 101 and SURG 108 and SURG 109

2023-2024 Course Descriptions

SURG 123 Applied Surgical Techiq III

Credit Hours: 4 / Billing Hours: 8

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
- Corequisite Course: SURG 110 and SURG 111

SURG 124 Applied Surgical Techniques IV

Credit Hours: 4 / Billing Hours: 8

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
- Corequisite Course: SURG 110 and SURG 111

SURG 150 Surgical Tech Special Topics

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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

TECH 102 General Industry Safety

Credit Hours: 2 / Billing Hours: 3

This course covers safety in the industrial workplace. 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. OSHA-30 General Industry Certification, and First Aid/CPR/AED certificates will be issued upon successful completion. (F, Sp, Su)

- Prerequisite Course: None
- Placement Score: Reading Level 3 and Writing Level 2

1323

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

THEA 110 Introduction to Theatre

Credit Hours: 3 / Billing Hours: 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 Score: Reading Level 5 or ENGL 099 concurrently

THEA 114 Intro to Technical Theatre

Credit Hours: 3 / Billing Hours: 3

Introduction to technical theatre for performing arts. Students will be introduced to the basic elements of scenic, lighting, costume, media, and properties design, and the execution of these design elements in a theatrical production. Students will be instructed on tool usage and on costume and scene shop safety, and will gain a practical understanding of the backstage elements in a theatrical performance. (F)

- Prerequisite Course: None
- Placement Score: None

THEA 115A Tech Thea II-Set/Light Design

Credit Hours: 2 / Billing Hours: 3

Intensive learning and application experience in set/lighting design. Assist at the beginning levels in set/lighting design while working on the season and studio productions for Performing Arts. (Sp)

- Prerequisite Course: Minimum 2.0 in THEA 114
- Placement Score: None
- Recommended: THEA 110

THEA 115B Tech Thea II-Prop Design/Const

Credit Hours: 2 / Billing Hours: 3

Intensive learning and application experience in property design and construction. Assist at the beginning levels of property design and construction while working on the season and studio productions for Performing Arts. (Sp)

- Prerequisite Course: Minimum 2.0 in THEA 114
- Placement Score: None
- Recommended: THEA 110

1324

F=Fall; Sp=Spring; Su=Summer

Online courses may require students to travel to an LCC campus or request an approved non-LCC testing site (additional fees may apply) for proctored exams. For more information, please visit the [Testing Services webpage](#)

2023-2024 Course Descriptions

THEA 115C Tech Thea II-Costume Des/Const

Credit Hours: 2 / Billing Hours: 3

Intensive learning and application experience in costume design and construction. Assist at the beginning levels of costume design and construction while working on the season and studio productions for Performing Arts. (Sp)

- Prerequisite Course: Minimum 2.0 in THEA 114
- Placement Score: None
- Recommended: THEA 110

THEA 115D Tech Thea II-Produc/Stage Mgmt

Credit Hours: 2 / Billing Hours: 3

Intensive learning and application experience in production and stage management. Assist at the beginning levels of production and stage management while working on the season and studio productions for Performing Arts. (Sp)

- Prerequisite Course: Minimum 2.0 in THEA 114
- Placement Score: None
- Recommended: THEA 110

THEA 120 Introduction to Acting

Credit Hours: 2 / Billing Hours: 3

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)

- Prerequisite Course: None
- Placement Score: None

THEA 131 Studio Theatre Performance I

Credit Hours: 1 / Billing Hours: 2

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. (Sp)

- Prerequisite Course: None
- Placement Score: None
- Corequisite Course: THEA 141

1325

F=Fall; Sp=Spring; Su=Summer

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2023-2024 Course Descriptions

THEA 132 Studio Theatre Performance II Credit Hours: 1 / Billing Hours: 2

Rehearsal, performance, and evaluation of a script which incorporates heightened language and movement. Focus is on expanding the actor's physical and vocal expressiveness. (F)

- Prerequisite Course: Minimum 2.0 in THEA 141 and (Minimum 2.0 in THEA 143 and THEA 173) or concurrently or department approval
- Placement Score: None

THEA 141 Acting I - Contemporary Credit Hours: 2.5 / Billing Hours: 4

Fundamentals of acting, including improvisational techniques; the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. (Sp)

- Prerequisite Course: Minimum 2.0 in THEA 120 or concurrently
- Placement Score: None
- Corequisite Course: THEA 131

THEA 143 Stage Voice for the Actor Credit Hours: 3 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: None
- Placement Score: None

THEA 150 Acting for the Camera Credit Hours: 3 / Billing Hours: 4

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 Course: Minimum 2.0 in THEA 120 or concurrently
- Placement Score: None. Department Approval required

2023-2024 Course Descriptions

THEA 160 Stage Combat

Credit Hours: 2 / Billing Hours: 3

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. (Sp)

- Prerequisite Course: None
- Placement Score: None
- Recommended: THEA 120

THEA 171 Play Analysis

Credit Hours: 3 / Billing Hours: 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. (Sp)

- Prerequisite Course: None
- Placement Score: None

THEA 173 Movement for the Actor

Credit Hours: 2 / Billing Hours: 3

Students will learn methods of physical transformation which can be applied to acting and character development. (F)

- Prerequisite Course: None
- Placement Score: None

THEA 181 Improvisation

Credit Hours: 2.5 / Billing Hours: 4

By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development. (F)

- Prerequisite Course: None
- Placement Score: None

2023-2024 Course Descriptions

THEA 210 Theatre History

Credit Hours: 4 / Billing Hours: 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)

- Prerequisite Course: None
- Placement Score: Reading Level 5 and Writing Level 6
- Recommended: THEA 110

THEA 220 Play Directing

Credit Hours: 3 / Billing Hours: 4

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. (F)

- Prerequisite Course: Minimum 2.0 in THEA 110 or Department Approval
- Placement Score: None

THEA 225 Building a Character

Credit Hours: 2 / Billing Hours: 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. (Sp)

- Prerequisite Course: None
- Placement Score: None
- Corequisite Course: THEA 240

THEA 233 Studio Theatre Performance III

Credit Hours: 2 / Billing Hours: 4

Students will rehearse and perform a Shakespeare play. (Su)

- Prerequisite Course: Minimum 2.0 in (THEA 143 and THEA 225 and THEA 240) or department approval
- Placement Score: None

1328

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2023-2024 Course Descriptions

THEA 240 Acting-Shakespeare

Credit Hours: 3 / Billing Hours: 4

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. (Sp)

- Prerequisite Course: Minimum 2.0 in (THEA 131 and THEA 141 and THEA 143) or department approval
- Placement Score: Reading Level 5
- Corequisite Course: THEA 225

THEA 283 Audition Workshop

Credit Hours: 2 / Billing Hours: 3

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. (F)

- Prerequisite Course: Minimum 2.0 in THEA 141 or department approval
- Placement Score: None

THEA 285 Stage Makeup

Credit Hours: 2 / Billing Hours: 3

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. (Sp)

- Prerequisite Course: None
- Placement Score: None

2023-2024 Course Descriptions

WELD 103 Combination Welding

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: 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.

WELD 108 Welding for Non-Majors

Credit Hours: 4 / Billing Hours: 6

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 Course: None. Department Approval is required.
- Placement Score: 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.

WELD 110 Gas Metal ARC Welding

Credit Hours: 4 / Billing Hours: 6

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 Course: None
- Placement Score: 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.

1330

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2023-2024 Course Descriptions

WELD 111 Gas Tungsten ARC Welding

Credit Hours: 4 / Billing Hours: 6

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 Course: Minimum 2.0 in (WELD 103 or AUTO 100 or AUTB 114)
- Placement Score: 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.

WELD 115 Robotic MIG Welding

Credit Hours: 4 / Billing Hours: 6

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 Score: 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.

WELD 125 Structural Print Reading/Weld

Credit Hours: 2 / Billing Hours: 2

This course is for students, apprentices, technicians, and others who must develop the ability to read and accurately interpret prints and welding symbols, which are the universal language of the welding industry. Teaches advancements in metallurgy, welding processes, and consumables, along with strict code enforcement used in industry today. (F, Sp)

- Prerequisite Course: None
- Placement Score: Reading Level 3 and Writing Level 2 and [Math Level 4 or Minimum 2.0 in (MATH 105 or MATH 106)]

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2023-2024 Course Descriptions

WELD 140 Creative Welding

Credit Hours: 2 / Billing Hours: 3

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 Course: None
- Placement Score: 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.

WELD 170 Special Topics in Welding

Credit Hours: .25 to 8 / Billing Hours: .25 to 11

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 Course: None
- Placement Score: None

WELD 191 Welding Project Lab

Credit Hours: 1 to 4 / Billing Hours: 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 their welding skills. Actual projects must be discussed and agreed upon by both the instructor and the student. (F,Sp,Su)

- Prerequisite Course: None. Department Approval is required.
- Placement Score: None

2023-2024 Course Descriptions

WELD 201 Tool and Die Welding

Credit Hours: 3 / Billing Hours: 4.5

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, Sp)

- Prerequisite Course: Minimum 2.0 in (METM 190 and WELD 105 and WELD 111)
- Placement Score: 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.

WELD 205 Pipe Welding

Credit Hours: 4 / Billing Hours: 6

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 Score: 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.

WELD 220 Structural Fab & Inspection

Credit Hours: 4 / Billing Hours: 6

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, Sp)

- Prerequisite Course: Minimum 2.5 in (WELD 105 and WELD 110 and WELD 125)
- Placement Score: 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.

2023-2024 Course Descriptions

WELD 250 Welding Internship

Credit Hours: 3 / Billing Hours: 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 Course: None. Department Approval is required.
- Placement Score: None
- Recommended: 2.5 GPA or greater

WELD 105 Advanced ARC Welding

Credit Hours: 4 / Billing Hours: 6

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 2.5 in WELD 103
- Placement Score: 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.